Gleanings in Bee Culture

Established 1873

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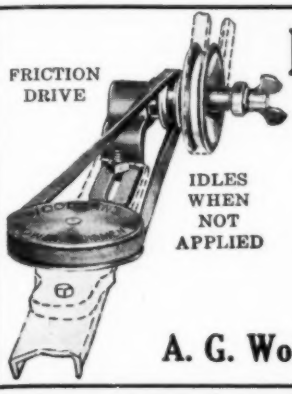

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The Monthly Honey Market

U. S. GOVERNMENT REPORT
Information from Producing Areas (last half of April).

California Points: Southern California—The weather has been generally clear with considerable early morning and night fog along the coast line. Temperatures ranged from normal to below. Oranges are in full bloom but due to foggy, cool weather bees have not been able to gather much nectar from it. The orange bloom will last two or three weeks longer. Bees are working on black sage but so far have stored little surplus. More rain is needed to insure a satisfactory flow from both sage and buckwheat. Swarming has started but so far has not been serious. Demand has continued fairly good with the market, especially for Light Amber, firm to slightly stronger. Sales by beekeepers in ton lots or more, per lb., at Southern California delivery points—extracted Orange, Water White 4¾, White to Extra White 4¼-4½c; Sage-Buckwheat, Light Amber to Extra Light Amber $4.40-4.60 per case of 120 pounds, few $4.25 per case. Demand for beeswax has been moderate to rather light, with eastern inquiry light. Prevailing offers to beekeepers delivered Los Angeles ranged 15-17c per lb.

Imperial Valley—The market has strengthened during the past two weeks. Sales reported, Light Amber to Extra Light Amber Alfalfa $4.10-4.25 per case of 120 pounds at country points; other sales $4.30-4.40 per case delivered Los Angeles.

Central California—Temperatures generally ranged above normal, especially in the interior valleys. Rain is needed over most of the area but particularly so in the sage and wild flower foothill section. Swarming has been spotted, and except where depleted by swarming the condition of the colonies is reported generally good. In orange areas the bees in many apiaries built up to swarming strength before the orange flow began. Orange nectar is coming in and some new crop Orange honey is already coming on the market. It appears, however, that the quality may not equal that of last year, and prospects are not bright for a heavy flow. The outlook for a sage flow is spotted, some sections reporting good prospects, others a poor outlook. Grasshoppers are reported threatening in the Coalinga section. Bees are working on eucalyptus, mustard, spikeweed, dwarf manzanita, fiddleneck, hoarhound, and various other flowers. Demand for honey has been rather slow with a slightly weaker tendency, due partly to early sales of Wild Flower and Orange honey by beekeepers needing cash. Sales by beekeepers in ton lots or more at Central California delivery points reported as follows, per lb. Extra White Orange 5¼-5½c; Light Amber Cotton 3½c; Light Amber Cotton and Blue Curl 3½c; Light Amber Spikeweed 3¼c; Light Amber Wild Flowers and Fruit Blossom 3-3¼c; some sales Light Amber Wild Flowers at 2¾c with cans returned. Sales delivered Los Angeles—San Joaquin Valley, Light Amber to Extra Light Amber Mixed Flowers $4.25-4.50 per case of 120 pounds.

Northern California—Rainfall limited to light showers along the north coast. Most dry-farmed crops are badly in need of rain, especially in the interior valleys. One beekeeper in the Sacramento Valley reports that it is the driest in 80 years. White thistle in irrigated lands is satisfactory it is stunted and rather dried-up on dry land. Some beekeeepers are planning to move their colonies from thistle areas to what they hope are better locations. Bees are working on orange, burr clover, mustard, wild radish, locust, alfilaria and other sources. Offerings of old crop honey have continued fairly liberal, but few dealers are reported interested in purchasing additional lots at present, and the market has been dull. Sales by beekeepers in ton lots or more at Northern California delivery points per lb.—Light Amber Wild Flower and Mixed Fruit Blossom 3-3¼c; Extra Light Amber to White Star Thistle 4½c, some sales $4.25-4.60 per case of 120 pounds.

SUMMARY—Temperatures in the far West have been consistently above normal and in

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the Southern and South Central States generally below normal, but the rest of the country has fluctuated from sub-normal to abnormally warm. Much rain has fallen in parts of the Southern and Central States, and though more rain would be useful, the so-called "Dust Bowl", for example, is in the best condition in 8 years. Plant prospects throughout the North are generally favorable west to the Mountain States, but the season is backward over a wide area. Dry weather is sharply lessening prospects on the West Coast. Oregon reports the driest April since 1871. Winter losses throughout the Clover Belt have generally been light and rarely above normal, and further west winter losses in commercial colonies have not proved as heavy as first anticipated except in spotted areas where winter stores were of poor grade or inadequate. Beemen in the South have had difficulty in bringing along package bees and queens at the normal time, but fortunately for them cool weather in the North caused requests for postponement of the shipping dates for many orders. Aided by cut prices more package bees were disposed of than was anticipated at one time. Unfavorable weather has reduced crop prospects in the Southeastern and Southwestern States.

Demand for honey has shown little change during this period. Some sections report a stiffening of the market with lessening of stocks but in others, especially in the Mountain States, prices have sagged further with the desire of beekeepers to clean up their stocks so far as possible before new crop honey comes on the market. While the carryover of honey into the new season will be spotted, as many beekeepers are completely sold out, present prospects are that the carryover will be the largest in years.

Monthly Report of Honey Producers

Early in May we sent the following questions to honey producers: 1. What is your estimate revised to date, of the amount of last year's honey crop not yet sold in your locality? Give answer in per cent. 2. At what price has honey been sold or contracted for, if any, in large lots (carload or less) in your locality during the past month for (a) extracted honey, per pound? (b) Comb honey, Fancy and No. 1, per case? 3. What are prices when sold to grocers in case lots of (a) extracted honey in 5 lb. pails, or other retail packages in terms of 5 lb. pails? (b) comb honey, Fancy and No. 1, per case. 4. What is the retail price to consumers in your locality of (a) extracted honey in 5 lb. pails, or other retail packages in terms of 5 lb. pails? (b) comb honey, Fancy and No. 1, per section? 5. How is honey now moving on the market in your locality? Give answer in one word, as slow, fair, or rapid. 6. What is the condition of the honey plants at this time in your locality, as compared with the average? Give answer in per cent. 7. What is the present condition of the colonies, as compared with normal, considering the number and age of the bees and the supply of stores? Give answer in per cent. 8. What is the per cent of winter and spring loss to date (if any) in your locality?

State. Name.	1938 Hold-over	Carload lots. Ex.	Comb.	To grocers. Ex.	Comb.	To consumers. Ex.	Comb.	Move-ment.	Cond. honey plants.	Cond. colo.	Win.-of spring loss
S-Ala. (J. C. Dickman)				.35		.45		Slow	100	100	
B. C. (A. W. Finlay)	30	.08		.65		.85		Slow	100	120	20
S-Calif. (L. L. Andrews)	7	.04½				.50	.28	Fair	70	100	5
S-Calif. (Geo. Larinan)	10					.45		Fair	10	70	
C-Calif. (Davis Bros.)	10			.43		.50		Slow	50	80	
SE-Colo. (Otis E. Adcock)	30			.40		.49		Slow	100	75	5
S-Fla. (C. C. Cook)		.04		.35		.50		Slow	100	100	5
C-Fla. (Harry Hewitt)	0			.42		.57		Fair	100	125	2
SE-Ga. (J. J. Wilder)	0	.06		.50		.65		Good	80	60	15
S-Ills. (Carl E. Killion)	10	.07	2.75	.48	3.25	.62	.18	Fair	125	100	2
NC-Ind. (T. C. Johnson)				.50	3.00	.60	.15	Slow	100	100	2
NW-Ind. (E. S. Miller)	30			50	3.00	.65	.20	Slow	100	90	15
W-Iowa (E. G. Brown)	20					.50		Fair	100	110	5
N-Me. (O. B. Griffin)	0				4.75		.30	Slow	100	68	30
N-Mich. (Ira D. Bartlett)	10			.45	3.20	.55	.18	Fair	100	75	15
S-Mich. (Floyd Markham)	20	.05		.45	2.40	.65	.15	Slow	100	85	5
C-Mich. (E. D. Townsend)	20	.05½							90	100	0
E-Minn. (Floyd W. Ray)	5	.05		.40		.49		Slow	100	110	8
W-Minn. (B. L. Morehouse)	5	.05		.45		.60		Fair	95	100	4
W-Nev. (Mrs. E. G. Norton)	0	.04¾						Slow	80	80	4
W-Nev. (Geo. G. Schweis)	25					.45	.18	Slow	75	100	5
W-N. M. (C. A. Baltzley)	0			.45	3.60	.60	.20	Fair	100	100	25
NW-N. Y. (Geo. B. Howe)	25					.60	.20	Fair	100	90	5
C-N. Y. (F. W. Lesser)	10	.06		.45				Fair	100	95	5
NW-N. C. (C. S. Baumgarner)	0						.25	Slow	100	90	10
SE-N.C. (W. J. Martin)	0	.06¾	1.50	.55	1.80	.75	.20	Fair	90	90	
E-N. D. (M. W. Cousineau)	10	.05¾		.51				Slow	90	90	10
C-Ohio (R. D. Hiatt)				.45	3.50	.65	.19	Slow	100	95	4
NC-Okla. (C. F. Stiles)	0			.45		.65		Fair	80	90	5
W-Ore. (H. A. Scullen)	25			.38		.45	.17	Slow	100	110	2
C-Penn. (Harry Beaver)				.50		.60		Slow	90	100	3
SE-Penn. (D. C. Gilham)	18			.70	4.00	1.00	.25	Slow	90	90	8
W-S. C. (E. S. Prevost)	0							Fair	100	80	10
NE-S. D. (L. A. Syverud)	5			.40	3.25	.55	.18	Slow	75	100	5
SE-S. D. (J. F. Norgren)	5			.43		.55		Slow	100	90	25
C-Tenn. (J. M. Buchanan)	0					.75	.20	Fair	100	100	1
E-Tenn. (W. L. Walling)	0					1.00		Fair	100	110	0
C-Texas (T. A. Bowden)	0			.45		.55		Fair	100	100	2
S-Texas (J. N. Mayes)	0	.05						Fair		12	
S Texas (H. B. Parks)	5			.48		.55		Fair	70	80	3
N-Utah (W. H. Hendricks)	8			.34		.50		Slow	100	80	30
S-Va. (T. C. Asher)	0			.50	4.00	.70	.20	Fair	80	90	7
S-Va. (L. N. Gravely)	0					.50	.15	Fair	80	65	35
SC-Wash. (Chas. Higgins)	5	.06			4.80	.49		Fair	90	100	5
N-W. Va. (W. C. Griffith)	0			.35	3.50	.50	.18	Slow	100	125	0

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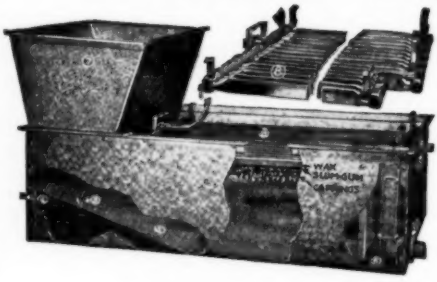
The Brand Capping Melter



SUCCESS IS DUE TO THE UNDER THE MELTER UNIT FEEDING. The Brand Melter has made all top feeding melters, old style and obsolete.

Here are tests made by Michigan State officials on samples of honey gathered during the extracting season of 1938, from locations where the Brand Capping Melter was in actual use. Tank honey means that the melter honey was run in with the extractor honey.

			Pfund grader		Refractometer
Running	Extractor	honey	Water white	.5	18.5% moisture
Running	Melter	honey	Extra white	1.0	18.1% moisture
Rink	Extractor	honey	Extra white	.9	18.8% moisture
Rink	Melter	honey	Extra white	1.4	19.1% moisture
Rink	Tank	honey	Extra white	1.1	18.7% moisture
Barrett	Extractor	honey	Water white	.1	19.0% moisture
Barrett	Melter	honey	Water white	.5	18.7% moisture
Barrett	Tank	honey	Water white	.3	18.4% moisture
Grauer	Extractor	honey	Extra white	1.0	18.8% moisture
Grauer	Melter	honey	Extra white	1.1	19.1% moisture
Grauer	Tank	honey	Extra white	.9	18.6% moisture
Monro	Tank	honey	Water white	.3	18.3% moisture
Potter	Extractor	honey	Water white	.2	18.1% moisture
Potter	Melter	honey	Water white	.8	18.2% moisture

Dr. Howard Potter, chemist, comments that likely the above tests were made with ordinary sugar sirup tables; that if the Chataway tables were used the moisture content should show approximately 1.5% less.

These hair-splitting tests show that honey gathered in apiaries a few miles apart or even from different hives in the same apiary, often show more variation than the use of the Brand Melter will bring about.

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E. G. LeStourgeon, Editor
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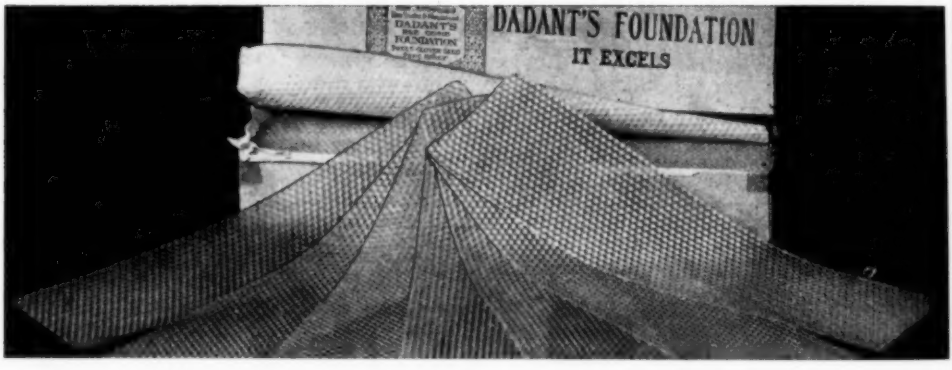

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BEE SUPPLIES OF ALL KINDS

Vol. 67
No. 6

Gleanings in Bee Culture

June
1939

Swarm Control

M. J. Rowland
Experimental Station, Kapuskasing, Ontario

What Does the Phrase Mean, Anyhow?

Last summer, the writer was asked what was meant by "swarm control". The question was not asked at one of the popular "True or False" contests, so a one word reply, with hope of its being the right one, could not be given. What does the phrase mean, anyhow? Does it mean applying control measures, (1), before the colony has developed the desire to swarm and before queen-cells are started? or, (2), after the cells have been started but before the swarm issues? or, (3), after the swarm has issued from the hive? The term may apply to any one of the three, but common usage does not include the third. It might apply to either of the others, but then we have the term "swarm-prevention" clamoring for a place in our phraseology. However, when and where these terms should be used, is a point best left for some central body to decide, or the editors of journals might have a get-together, make a decision and set a lead in usage.

Personally, I like to use "swarm-prevention" when referring to the time before the queen-cells are started and "swarm-control" to the period during which the cells are being built.

Swarming is Natural

In mentioning swarms, I am not including absconding, hive-desertion or hunger-swarms, but only those by which the bees would make an increase in the number of colonies. Those swarms are a natural desire of the honeybees and are nature's method of making increase. Without it, under wild conditions, there could be no increase in the bee population. The usual procedure in swarming is for the old queen and bees to leave their home to the younger generation. They go out and establish a new colony, thus making two where only one existed before. No unnecessary risk is taken of the younger bees being unable to carry on so the bees swarm only when the colony is at or near a peak of prosperity. They seldom swarm when short of stores, infested with disease or over-ridden by any other calamity. In short, they will not desert their kin and home, unless conditions are such that will assure its continuity.

Another guide given us by nature is the tendency for bees to swarm during certain phases of the honey flows. They never swarm in the spring before the flows commence, neither do they swarm after the "last rose of summer", at least they do not in this Northern area. Unless badly crowded in brood-chamber and super, swarm-preparations are usually commenced when the flow is either increasing or is tapering off. This varies in different areas but seems to be fairly constant in many.

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These two characteristics, i.e., (1), the tendency to swarm when at a peak of prosperity and, (2), swarming during certain phases of the honey flows, give us a good base from which to work out some method of control and the time of applying it.

Ample Comb Space and Ventilation Essential

It would seem that the most natural methods consist of giving the bees sufficient space and ventilation in brood-chamber and super during the early part of a flow. Space in the brood-nest may be provided by using the double brood-chamber or by periodically raising one or two combs of brood to a super and replacing them with empty combs. This latter method is suited more to those beekeepers who have time to spare for the careful examinations for queen-cells which are invariably built on the raised combs. However, this system does induce the bees to pass more freely through the queen excluder to and from the super and may, for this reason, be worth the time expended on the examinations. One or two frames of foundation placed in each super, instead of using all drawn combs, allows more air space there and also draws many young bees from the crowded brood-combs.

Ample ventilation should be provided during the swarming season. Supers may be either staggered or held apart with thin chips of wood, such as pieces of comb honey section. The space, however, should not be wide enough to induce robbing. To air the brood-chamber, a sturdy wooden frame may be placed between it and the bottom-board, or hive-floor. This frame should be wide enough to raise the brood-chamber up about one inch and should have a goodly number of holes, as large as possible, drilled through it. Wire screening should be tacked over each side of the holes to minimize the possibility of robbing.

Colony management, during the period between the flows, should include some manipulation which will temporarily disorganize the colony or which will remove the impression of prosperity and leave in its place a desire to build up.

I have, in some instances, taken partly filled supers off and left them on a stand behind the colony and

HOME YARD, DOMINION EXPERIMENTAL STATION, KAPUSKASING, ONTARIO

(1) On May 24, 1938. (2) A summer view. The board fence in the background is 9 feet high. (3) Oct. 25, 1938. As the barefoot boy says "Summer's went". (4) April 10, 1939. Find the board fence and open shed.

given the bees an empty super to mourn over for a few days.

However, colony manipulation is not an ideal method of swarm-control. It never can be more than a temporary operation which must be performed on each colony every year. Its effect will not carry through to the next season, neither will its influence be felt by the descendants of the queen which heads the colony. It does not permanently affect the very natural desire to increase the number of colonies in existence.

Breeding Non-swarming Bees

There is, fortunately, one way in which this problem may be attacked with some hope of permanently eliminating it. It can be accomplished by using, for queen-rearing purposes, only those colonies which show the least tendency to swarm. In short, by breeding out the swarming trait. It is being practiced by many beekeepers and considerable headway has been made. The solution lies, not in promiscuously allowing the bees to requeen themselves, but in using queens and, as far as possible, drones of non-swarming strains whether the queens be purchased or reared at home.

The possibility of amplifying desirable characteristics and of reducing unwanted ones through selection of the parent stock is common knowledge and is being practiced by many beekeepers. As mentioned before, considerable headway has been made, but the queen-rearer is at some disadvantage in this respect because of his inability to choose the male parent. The queen, however, may be reared from properly selected stock as easily as from hit-or-miss selections.

Non-setting strains of hens have been developed, also drought resistant strains of grains and vegetables and rust resistant strains of wheat and oats.

Those who rear their queens by transferring larvae from the combs to queen-cells would naturally take the larvae from their most desirable colony.

The beekeepers who let their bees requeen themselves are the ones who have the most difficulty in the work of selection. Though even for them, it is not difficult, if one of the simpler methods of queen-rearing is learned and the habit of practising it is formed. The extra time which may be required will be more than saved in future years through the lessening of swarm-control manipulations and of chasing the odd swarm which escapes.

Propogate Desirable Drones

Controlling the drones from undesirable colonies is the most difficult obstacle in the path of developing a non-swarming strain of bees. It is the swarming strains which usually produce drones most abundantly and these scrub drones roam the airways freely. The number of drones reared in such colonies may be reduced by using, in the brood-nest, only those combs with the fewest number of drone-cells, and by destroying, at every opportunity, any drone brood that does appear.

One unique feature of beekeeping is that the mating of a queen cannot be changed as it can with other branches of live stock. Bees are true monogamists. They can never be accused of bigamy. Therefore, if a colony swarms or shows indications of wanting to swarm, the queen should be replaced as quickly as possible.

Practices, similar to the colony manipulation of beekeeping, are, in other vocations going rapidly into the discard. They are too costly in time and labor which, in turn, keeps up production costs of the ultimate product. Great strides have already been made in the beekeeping industry, and there are now strains of bees which are almost non-swarming but with so many scrub drones flying, it is always a problem to maintain purity. However, **if all colonies, which show swarming signs, were immediately requeened from selected stock, all drones would soon be of an improved strain, and progress would be more rapid.** The beekeepers, who have a queen-rearing turn of mind, might to good advantage, arrange to supply their not-so-inclined neighbors with queens of the selected strain. Exceptionally good queens could be returned for use as queen-mothers.

In a contemporary journal (A. B. J. March, 1939, p. 117) there is an article referring to some work of the Rockefeller Institute for Medical Research. The work is indicating, or proving, the possibility of "Inborn Resistance to Disease". The principles outlined are equally applicable to swarming and might be entitled "Inborn Resistance to Swarming".

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Swarming

E. S. Miller

What Are You Going to Do About It?

It will soon be time for bees to swarm. What are you going to do about it? Will you sit and watch for swarms? Are you expecting to chase swarms and climb trees? Will you try to stop swarming by going through the hives twice a week pinching out queen cells? If this last is your "method" the bees will fool you for they can start cells faster than you can cut them out, not to mention the ones you overlook.

There are all sorts of schemes advocated for swarm control, most of them ineffective. Many are only partly successful. Only a few can be counted on as a real preventive. Some beekeepers try to control swarming by removing some of the brood, replacing it with combs or foundation. As a means of swarm control this is not good beekeeping practice. At best it only delays swarming. Secondly, it necessitates a great amount of labor, and third, if foundation is used, it results in a large percentage of inferior combs. Also there is the wise guy who says he can get along without queen excluders in the production of extracted honey, claiming his bees don't swarm. I have seen many such hives with the queen in the third or fourth story and only a lot of ragged empty combs below.

Of late years it is becoming quite the vogue to try to control swarming by using a double hive-body as a brood chamber and later piling on supers as the bees build up. It is true that this plan tends to lessen swarming but it is by no means a sure remedy. It is claimed that this plan requires the least amount of labor. However, it has its disadvantages in that usually a considerable number of colonies will swarm. The queen will establish the brood nest as high as possible where there are open cells and unless the colony is very strong, the bees will leave the combs in the lower section unoccupied to be gnawed away during a dearth of nectar. If the two sections of the hive are reversed, that is, the lower hive-body placed above the other, the open spaces in the combs will later be filled with drone comb.

There are only a very few methods of swarm control that are really effective. Of these I will mention two which, by the way, require a minimum amount of labor. The first method is by removal of the brood—not part of it but all of it—replacing it with combs or foundation, shaking off the bees and using the brood for nuclei or to strengthen weak colonies. If foundation is used, a super rim should be placed below to enable the cluster to become attached to the bottom-bars and work up gradually, thus avoiding stretching of foundation and lessening danger of the bees absconding. Of course, the rim must be removed as soon as the combs are built down to the bottom-bars. This method may be used in comb honey production.

The second method, used only in the production of extracted honey, is known as the Demaree plan. It consists in confining the queen to the lower story and elevating nearly all of the brood to an upper story above a queen excluder, preferably also, above a super or food chamber, replacing the brood below with drawn combs but not with foundation, for in order to secure good combs, foundation must be drawn out above, not below the brood. If the work is done in time, before queen cells are started and before the bees acquire the swarming impulse, the method is practically a sure preventive of swarming for at least three weeks or until the brood nest is again filled. Thus, as in outyards, it obviates the necessity for frequent brood examinations. In case of a prolonged honey flow, a second similar manipulation may become necessary. By always placing the brood at the top of the hive, it is easily accessible for removal of queen cells within ten days if thought desirable.

Some may object to this method, claiming that it requires too much time and labor. While an inexperienced person may have difficulty in finding the queen, likewise one with poor eye-sight, actual timing of the operation on numerous occasions

(Continued on page 393)

A Bit o' Fruit and Honey

Mrs. Benj. Nielsen

Combine These Two Wholesome Foods for Many Delicious Desserts

Try honey cherry pie for a real taste thrill.

This time of the year appetites are apt to be a bit finicky and to need a bit of coaxing. It's that in-between season when fresh fruits are yet too expensive to be indulged in frequently; when we have become more than a little tired of the general run of canned fruits. What shall we do? Those with plump pocketbooks are not concerned; but we are speaking of the budget-wise, thrift-conscious folks who feel that they must use those last few jars of cherries and those few remaining apples; those of us who still rely upon economically priced dried fruits, supplemented frequently with near gallon varieties of canned fruits. Let's reach for the honey jar and get to work—let's give the family a taste thrill!

While you are filling that honey jar let me say that no matter what time of the year it is there is no better way to start the day off right than by downing a glass of honey-sweetened fruit juices, preferably half an hour before breakfast. There is no easier way to provide that quick energy necessary to clear away mental sluggishness. One may use straight orange, grapefruit, pineapple or lemon juice, or a combination of the first three, with a dash of lemon for tartness. Just a few mornings and it gets to be a habit—and a very good one!

Is that honey jar well filled now? We are going to use lots, for honey can do wonders in intensifying and enriching fruit flavors. Many a dull meal can be given a happy ending with a skillfully honey-sweetened dessert, each bite whetting the jaded appetite. Second helpings are pretty apt to be in demand, so we can further savor that elusive, inimitably fine flavor, characteristic of honey-fruit combinations.

If you have never eaten honey-treated cherry pie you have never tasted cherry pie at its best, so let's begin with—

Honey Cherry Pie

Two and ½ cups sour cherries, well drained, ¾ cup honey, 1 cup cherry juice, 2½ tablespoons tapioca, quick cooking kind, ⅛ teaspoon salt and 2 tablespoons melted butter.

Combine cherries, honey, cherry juice, tapioca, salt and butter; let stand 30 minutes. Pour into pastry lined pan. Cover with second crust, folding edge underneath bottom crust and pressing the edges together with the tines of a fork to seal in any adventurously inclined juices. Deftly make a few "tracks" on top, to permit steam to escape, then brush with milk and slip it in the oven. Bake 15 minutes at 450 degrees F. Reduce the temperature to 350 degrees F. and bake 30 minutes longer.

For a crust that fairly melts in your mouth you will need: two and ½ cups of sifted flour, ¼ teaspoon baking powder, ½ teaspoon salt, ⅔ cup vegetable shortening, and about ⅓ cup of ice water. For best results all ingredients and utensils should be cold.

Sift flour, measure and resift with salt and baking powder. Cut in half of the cold shortening with two knives or a pastry blender, until

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mixture resembles cornmeal; work in remaining shortening until particles are size of peas. Sprinkle water, one tablespoon at a time, over mixture. With a fork, work lightly until all particles are moistened and in small lumps. Add just enough water to moisten. Press dampened particles into a ball, not handling dough any more than necessary. Wrap in wax paper and chill, at least two hours before rolling into crusts. Makes two crusts for 9-inch pie plates.

While we are on the subject of pies try making your favorite apple pie, omitting sweetening; sprinkle with cinnamon and dot generously with butter; bake in one crust until the apples are tender; remove from oven and drizzle one-half to three-fourths of a cup of honey over the apples. Let stand until the apples have absorbed all of the honey. Serve plain or with honey ice cream.

Cherry Tapioca

Two cups unsweetened cherry juice, 1 cup honey, ⅛ teaspoon salt, ⅓ cup quick cooking tapioca and 1 cup sour cherries, well drained.

Combine the cherry juice, honey and salt in the top part of a double boiler, place over rapidly boiling water. Stir tapioca in slowly. Cook until clear, 5 to 15 minutes, stirring frequently. Remove from heat and add the cherries, which have been well drained and cut into small pieces. Serve thoroughly chilled.

Cherry Cup Puddings

One egg, ⅓ cup honey, 2 tablespoons butter, 4 teaspoons baking powder, 1½ cups flour, 1 teaspoon vanilla, 2 cups sour cherries, 2 tablespoons additional honey, ½ teaspoon salt, and ⅔ cup of milk.

Add two tablespoons of honey to the well drained cherries and let stand. Meanwhile beat egg until light and fluffy, beat in honey gradually and the softened butter. Sift flour, measure, mix and sift with salt and baking powder. Add alternately with the milk to the first mixture. Add vanilla. Place a few honeyed cherries in well buttered custard cups, cover with a layer of pudding batter, then more cherries; continue alternate layers until cups are ¾ full. Steam for 30 minutes. Remove from cups and serve warm with—

Honey Hard Sauce

One-half cup butter (¼ pound) 2 tablespoons lemon juice and honey. Cream the butter thoroughly, work in the lemon juice slowly and as much honey as the mixture will take without separating.

Cherry Pineapple Cobbler

Two cups of cherries, 1 cup pineapple, cut in cubes, ½ cup nutmeats, 2 cups flour, ⅓ cup milk, 3 teaspoons baking powder, ½ teaspoon salt, ½ cup honey, ¼ cup butter and 1 egg.

Drain the cherries well, combine with pineapple and place in buttered baking dish. Mix one tablespoon of the flour with the nutmeats. Sift the flour, with the baking powder and salt. Cut in butter; add honey and milk to the well beaten egg and stir in the flour mixture. Add the floured nutmeats and mix thoroughly. Drop the batter over the fruit. Bake in moderate oven, 350 degrees F. for about one hour. Serve with honey sweetened whipped cream or hard sauce.

Cherry cobbler makes a happy ending for most any meal.

Honey Apricot Ice Cream

One-half pound dried apricots, 1 cup honey, juice and grated rind of 1 orange, ¼ teaspoon almond extract, ¼ teaspoon salt, 4 cups milk and 2 cups whipping cream.

Cover the apricots with water and simmer until soft in a covered pan; press through a sieve, add honey and stir until thoroughly blended. Cool. Add remaining ingredients except the cream. Partially freeze; add cream whipped until stiff and continue freezing. Makes three quarts.

Do you scorn the lowly rhubarb, or old-fashioned "pie plant" after a few dishes of sauce from the first tender shoots? For fine flavor pick-up, try cooking without sweetening, remove from heat and stir in honey to taste. Another time, assemble: Two pounds of rhubarb, 1 cup of water, ½ lemon and ⅔ cup of honey. Cut the rhubarb in small pieces, without peeling, add water, lemon, cut in thin slices, and the honey. Simmer gently or cook over rapidly

Do not scorn the lowly "pie plant" after a few dishes of sauce from the first tender shoots. Bring out the honey jar and try new combinations.

boiling water, until the rhubarb is tender. Remove about a cup of the rhubarb and run remainder through a sieve. Measure the puree and thicken slightly, using one teaspoon of cornstarch to each cup. Cook until clear. Fold the rhubarb pieces in carefully. Garnish with lemon wedges. Serve hot or cold.

Deep-Dish Rhubarb Pie

Three-fourths cup honey, 4 tablespoons flour, ¼ teaspoon salt, 5 cups diced rhubarb, 4 tablespoons butter, honey and butter pastry.

Combine honey, flour and salt; pour over the diced rhubarb and mix thoroughly. Place in buttered baking dish and dot with butter. Roll the pastry lightly to one-quarter inch thickness, spread with warm honey, roll as for jelly roll, cut in slices and place on rhubarb. Brush with milk. Bake in hot oven, 425 degrees F. for 10 minutes, reduce the heat to moderate, 350 degrees F. and continue baking until the pastry is brown and the rhubarb tender.

For the butter pastry you will need: Two cups of sifted flour, ¾ teaspoon salt, ⅔ cup butter, ½ teaspoon baking powder and ⅓ cup cold milk.

Sift the flour, salt and baking powder together; cut in butter with two knives or a pastry blender. Add the milk, a tablespoonful at a time, stirring only enough to moisten the ingredients. Pat to a ball and roll out on lightly floured board.

Baked Rhubarb and Bananas

Six bananas, 3 cups of diced rhubarb, ½ cup hot water, juice and grated rind of one orange and ⅔ cup of honey.

Peel and slice bananas into buttered baking dish. Add diced rhubarb. Combine water, honey, orange juice and grated rind. Pour over fruits. Bake in moderate oven 350 degrees F. for 30 minutes.

Honey Rhubarb Crisp

Three cups rhubarb, ⅔ cup honey, 1 egg, 2 tablespoons cornstarch, ¼ cup butter, ⅓ cup brown sugar and ⅔ cup flour.

Cut the rhubarb into small pieces. Moisten the cornstarch with water and add to the well beaten egg. Stir in honey. Pour over rhubarb and mix well. Place in buttered baking dish. Cover with remaining ingredients worked together until crumbly. Press down on the rhubarb. Bake 30 minutes in moderate oven, 375 degrees F. Delicious served warm and plain; or cold with thick cream.

The Value of an Auxiliary

Statistics show the American dollar is spent mostly by the American woman. She purchases most of the food consumed; if we can contact the women and make them realize that honey is a good food and not a luxury we have helped the honey producer and warranted our existence as a Beekeepers' Auxiliary.

The public must wish information on the uses of honey as 22,237 copies of printed matter have been distributed in the last seven years to the women of Iowa and the adjoining states by the Home-makers' Half-hour through the Home Economics Division of the Iowa State College through Radio Station WOI.

The American Honey Institute also has its finger on the pulse of the Beekeeping Industry and the buying publics' need of honey. The Institue, the State and National Auxiliaries should all work together like the cogs of one large machine, one supplementing the other.

The Iowa Auxiliary has a Round-Robin Letter on its way to all the members and each as she receives it is to add her choicest honey recipe. We hope to receive some really worthwhile contributions in this way. In it is a plea for dues to both the State and National Auxiliaries. The National Membership Contest closes December the first, 1939. There are prizes of $3.00, $2.00 and $1.00 for the states turning in the greatest number of memberships before the dead line.

Through the efforts of the Auxiliary the Honey Cookery Contest has gained recognition and next fall it will be housed better and with much more attractive surroundings than heretofore.—Mrs. G. N. Polhemus, Pres., Iowa Beekeepers' Association Auxiliary.

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Fig. 1—A good stand of alsike clover receiving maximum pollination and having no seed lost in harvesting would insure a yield of approximately 15 bushels per acre.

The Importance of Honeybees in Alsike Seed Production

W. E. Dunham
Extension Specialist in Bee Culture for Ohio

Unfortunately there are no statistical data on the extent of alsike seed production in the various states. In the report of the United States Department of Agriculture red and alsike clover seed production are grouped together. The states producing the largest quantities of these seeds are Michigan, Illinois, Indiana, Wisconsin, Minnesota, Oregon, and Ohio. The prominent place which Ohio occupies in the production of these seeds is shown in the fact that it has held the leading position six times during the past ten-year period. The peak year of production occurred in 1932 with 353,600 bushels.

In the leading state where the production of alsike seed is most intensified, there is a wide variation in the seed yields ranging from practically no seed to as high as seven to eight bushels per acre. Studies have been initiated to ascertain how important a part pollination plays in the explanation of the wide variation of seed yields per acre.

Does Lack of Pollination Explain Low Seed Yields?

In our alsike pollination demonstrations among farmers, test cages are used to demonstrate if alsike clover is self-pollinated, wind pollinated, or insect pollinated. All cages are of the same size, namely, 3 feet by 3 feet by 3 feet and are placed over alsike just previous to the blooming period. To test if alsike is self-pollinated, the cage is covered with cheesecloth which excludes pollinating insects as well as wind (Fig. 2). The results for 1938 are given in Table I and show an average of 5.5 seeds per head in the Bixler field and .4 in the Siefert field. The higher seed set in the Bixler field may possibly be accounted for by thrip insects which are extremely small and live in the corrollas of clover blossoms. From a practical standpoint the seed set obtained through self-pollination is so low that the value of the seed would not even cover the cost of harvesting. To test if alsike clover is wind pollinated, the cage is covered by window screening to exclude pollinating insects but allows wind to pass through the cage (Fig. 3). As seen in Table I, only one cage of this type was set up in 1938 where a seed set of 3.4 seeds per head was obtained. This extremely low set would result in the production of so little seed as to be valueless from the standpoint of a farmer. Further tests on wind pollination are planned for the current season. In determining if alsike clover is dependent upon insect pollination a three-frame nucleus supplied honeybees to insure cross-pollination of the blossoms within the cage (Fig. 4). Table I shows that the seed set of alsike bloom in these cages ranged from 120 to 125 seeds per head. This demonstrates that alsike clover is dependent on cross pollination by means of pollinating insects and that maximum seed set is insured only by an abundance of insect pollinators.

Survey of Pollinating Insects and Seed Yields

Not only has it been shown that alsike clover is insect pollinated but that to insure thorough cross-pollination there must be an abundance of pollinating insects. It is therefore vitally important to obtain data in the important seed growing sections

on the amount of pollinating services rendered by neutral pollinating insects. It is equally important to know to what extent honeybees must be depended upon in meeting the requirements necessary to insure adequate cross-pollination for profitable seed crops. Work of this type is already underway in the seed growing areas in Ohio.

In making surveys on the abundance and types of pollinating insects, plots of a known area are laid out. (Fig. 5). At the beginning of each observation period, weather conditions are recorded such as temperature, light intensity, wind velocity, and humidity. By following a standard procedure in making these surveys, the data gathered in the various areas can be used comparatively to show just how serious the scarcity of pollinating insects may be.

A survey conducted in 1936 in the seed-growing areas revealed an alarming scarcity of natural pollinating insects (excluding honeybees). During 13½ hours of collecting on alsike bloom, only 49 pollinating insects were obtained of which 42 of the total number were solitary bees, 5 were flies, and the remaining 2 were bumble bees. Under "Field Pollination" in Table I, yields in the Bixler, Rhodes, and Siefert fields are recorded as ranging from 2.6 to 4.6 seeds per head. These fields were selected because of the absence of honeybees and therefore the data obtained are of extraordinary value since they show the appallingly low seed yields which occur through the activity of natural pollinating insects alone. The question might be raised that possibly these low seed yields were due not to a lack of pollination but rather to some other influencing factor which prevented the setting of seed. Fortunately in these same fields cages were set up where honeybees provided thorough cross-pollination with yields varying from 120 to 125 seeds per head (Table I), which shows conclusively that these alsike plants had the ability of insuring large seed crops had there been intense pollinating activity on the bloom.

In contrast three other fields in the same counties were selected because apiaries were located in the near proximity to them. The Huntsville field which averaged 65 seeds per head was located approximately one mile from an apiary of 70 colonies. In the Kline field 18 colonies bordered the alsike field and even though there were over 150 acres of alsike in bloom in addition to the 40 acres in the Kline field, the effect of honeybees on the seed set was apparent, the average yield being 29 seeds per head. An apiary of 24 colonies was located approximately 1¼ miles from the Failor field, which averaged 32 seeds per head. Two fields in other counties were checked because of the heavy concentration of honeybees. In the Schram field located in Allen County, there were at least 150 colonies within flying range with the result of 85 seeds harvested per head. Two hundred colonies were within flying range of the Hughes field located in Miami County where an average of 90 seeds per head was obtained.

The results from experiments carried on in 1938 show that in the fields where insect pollination was performed by natural forms alone the seed yields were so low that the fields were harvested for hay. In all the fields selected because of the presence of honeybees, seed sets occurred which insured profitable yields. The results also emphasized that abundant seed set is directly correlated with a heavy concentration of hive bees. As a note of explanation it should be pointed out that alsike

TABLE I

POLLINATION OF ALSIKE CLOVER—1938

County	Self-pollinated (cage)		Wind Pollinated (cage)		Insect Pollinated (cage)		Field Pollination	
	Field	Av. No. Seeds per Head	Field	Av. No. Seeds per Head	Field	Av. No. Seeds per Head	Field	Av. No. Seeds per Head
Logan	Bixler	5.5			Bixler	121	Bixler	2.6
							Huntsville	65.0
Marion			Rhodes	3.4	Rhodes	120	Rhodes	3.3
							Kline	29.1
Wyandot	Siefert	.41			Siefert	125	Siefert	4.6
							Failor	32.8
Allen							Schram	85.2
Miami							Hughes	90.4

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Fig. 2—A test cage over bloom which excludes all pollinating insects to determine if self-pollination occurs.

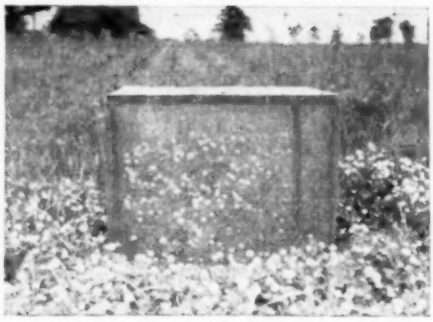

Fig. 3—A screened cage excluding pollinating insects to determine if alsike clover is wind pollinated.

seed yields in Ohio for 1938 were low because of the enormous acreage of available bloom and furthermore alsike clover did not compete well for insect visitors.

The Magnitude of the Pollination Problem and the Seed Yielding Capacity of Alsike Clover.

The pollination problem in alsike seed production is contrastingly different from that encountered in fruit pollination. In the former case the farmer is interested in having as nearly as possible 100 percent seed set while in the case of the apple grower if 4 percent of the blossoms of an average bloom set fruit and mature he has attained his goal.

One acre of alsike bloom represents an enormous number of individual florets all of which must be cross-pollinated before maximum seed production can occur. A survey in 1936 in four counties revealed that one acre of bloom may represent from 300,000,000 to 500,000,000 florets. Since the blooming period is influenced by weather, but seldom extends more than six weeks, it is obvious that an abundance of pollinating insects must be present to insure thorough cross-pollination. The honeybee is the only pollinating insect which can be controlled economically. Not only is it possible to control the number of bees in an individual hive, but by the aggregation of 50 to 100 hives in one location the total insect population necessary to insure large seed yields may be controlled. The concentration of this number of hives would represent 4 to 7 million potential pollinating insects available for pollinating service within a restricted area. Because of the number of hives necessary to insure clover pollination, the renting of bees for this purpose might be prohibitive. Since alsike clover represents one of the major nectar-secreting plants, commercial honey producers are interested in such areas. A logical approach to the solution of the pollination problem in areas where the insect population is low would be cooperative efforts

(Continued on page 394)

Fig. 4—A screened cage over blossoms where honeybees are provided to determine if alsike clover is dependent on insect pollination to insure seed set.

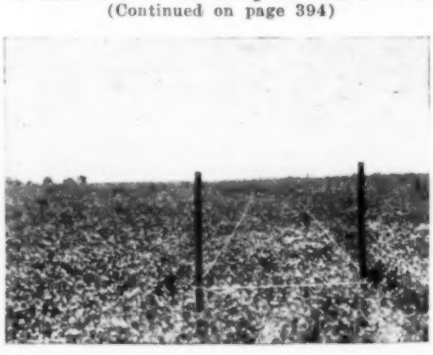

Fig. 5—Surveys on the abundance and types of pollinating insects in alsike seed growing areas are based on data gathered on experimental plots of a known area.

Production of Comb Honey

Carl E. Killion

The Honey Flow, Crop, and Marketing

Not the farmer's friend, but the beekeeper's friend. Note wheel mounted on springs.

(Continued from May)

Swarm control, queen rearing, and the honey flow all coming at the same time make busy days for the beekeeper. Not only are they busy days but they are trying days—days when we must maintain our equilibrium. Time is precious during this period, and mistakes are very costly. Although swarms may be in the air and supers must be given or shifted, the writer takes the time to graft a few bars of cells. The queens from these same cells are to play an important part in the crop next year.

Volumes have been written on **swarming and the cause of swarming.** I disagree with many of those theories. I am pleased when we have one of those excessive swarming years. One cannot expect excellent super work until this **swarming fever has passed.** It is then that our very fancy sections are produced.

Supering

Correct supering is the most difficult operation to describe. It is improper supering which causes difficulty with most beekeepers in producing section comb honey. One common mistake is in giving too much room at one time. When reducing the colony to one story at the beginning of the flow, only one super is given, this being the super containing the two bait sections. I shall expect criticism on my next statement. The statement is that regardless of what size or style of hive used, I **recommend nothing larger than the eight-frame size super.**

When to give the second super depends on several factors—weather condition and amount of honey plants and strength and storing ability of the colony in question. Our **biggest colonies do not always store the most honey.** The volume of the flow must be considered. Therefore, I cannot give any set rules on correct supering. I can only give timely suggestions; each beekeeper must super according to his individual needs. In an average flow the first super should be over half drawn and filled (three-fourths is better) before the next one is given. This second one is given **on top** and is left there until the next visit. Giving this on top allows the bees to attach the tender foundation to the section; at the same time the first super is nearing completion quicker. About three days later this colony has the lower super practically full and ready to seal. The top super is then placed next to the brood chamber raising the other super to position number two on the hive. The next trip shows the top super nearing completion, the one next to the brood chamber is over one-half full, and the third super is given **on top.** At the next visit this one will again go next to the body, raising the other supers in their respective positions. If the first super given is entirely sealed over it is placed over an escape after shaking as many bees as possible from it. Supers are always examined from the bottom as well as top to determine if they are ready to remove.

Removing Finished Supers

One must remove comb honey just as soon as it is completely sealed. Otherwise, it takes only a very few days until it is travel-stained enough to mar its beauty. The writer does not use carbolic acid to remove comb honey. In experiments where it was used, bees would disgorge unripe nectar into any open cell, causing a messy section the first time it was turned over. At almost every

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trip to the yards during the honey flow one has some supers to cut off. These, when free of bees, are brought in to the honey house and stacked in rows not over fifteen or sixteen high. An empty super is placed on top and in this is placed a saucer full (or approximately that amount) of carbon bisulphide and a cover is placed on top. This is an essential part of producing comb honey. Every five or six days these stacks get another shot of carbon to prevent the wax moths from ruining the comb. The evening before this stack is to be scraped they are given an additional shot.

Scraping and Grading Sections

Scraping comb honey is a tiresome job, but as the table begins to fill up with beautiful sections one does not notice the work so much. The tops of the sections are scraped while they are still in the super, especially if the crop comes with a rush with very little propolis carried in. Next, the springs are removed and the super turned up-side down, the outer shell slipped off, T tins removed, and the bottom of the sections scraped. This is all done while the sections are in the block formation. The entire block is now turned right-side up and each section is scraped individually. Sections are watched for defects, weighed, and stamped.

Twenty-four sections are weighed at a time. This weight is always written on one end of the case. These sections must weigh twenty-two pounds before going into the fancy grade. Even though they have every other requirement, unless they attain this weight they are not classed as fancy. One policy the writer has always followed is to never hide an off-grade section in any case. Grade honestly. If it is a No. 1 section don't try to slip it into a case marked fancy. In delivering a load of honey to the buyer **you are not doing a jitter-bug dance** for fear he will find those certain cases or few sections you have hidden away.

Marketing

I have already mentioned about too much poor quality comb honey going to market, also about using a cellophane wrapper with a nice printed border to hide the two or more vacant rows of cells. Both of these have a tendency to break down the markets. One other thing—those two bait sections used in the first super **never go to market.** If they are not extracted and used for baits again next year they are placed on the melter. Then there are those beekeepers who market honey that is fermenting. Some call it watery honey, weeping, or some other such

Comb honey colony beside a stack of brood for increase. Unlike most small weak increase one generally sees.

term. This honey should never have been sold, but placed on the capping melter. The grocer does not like to have honey running out of the case or cellophane wrapper all over other merchandise. Those beautiful white sections you bought in the spring! Keep them in that condition until they go to market, and do not have them all smeared with finger prints. A local boy went to Chicago one time for work with a large contractor to build houses. The contractor watched the young man for a short time and said, "Drive your nails here in Chicago, Johnny, but leave your hammer marks in Paris." The same goes for finger prints on sections.

Care must be used when marketing our crop to sell it in the proper price brackets. One should not peddle honey from house to house, then call upon the grocer and ask him the same price as the housewife. Honey sold to the consumer must bring the top price. When selling to a jobber or a wholesale dealer we must allow them a very reasonable margin of profit. These men are just as essential to the industry as we who produce the honey. We cannot all sell honey to the consumer, but we can create an interest and a desire for honey. It is our duty to make every effort to produce as fine an article as possible. Grade it honestly and market it intelligently.

(To be continued)

From the Field of Experience

A HANDLE FOR THE WAX CAKE

Walter H. Hull

When rendering wax, if the cake of wax is of considerable size it is often hard to remove from the container, even from one with sloping sides. When a straight-sided container is used it generally has to be split down one side to get the wax out, thus ruining the can. Soaping the inside may help but does not remove the difficulty. However, by putting a piece of wire into the can before filling it with wax, the cake may be

A length of wire extending across the bottom and up the sides of the can before it is filled with wax serves as a handle for pulling the cake out after it has hardened.

pulled out with no trouble after it hardens.

Any short length of ordinary smooth wire will do. Bend it so that it extends across the bottom and up the sides of the can. It should be long enough so that the two ends can be connected over the top of the cake of wax. In this way the wire serves as a handle to pull the wax out of the container.

Five-gallon honey cans with the tops cut out are generally the handiest things to use for wax, but it is not very satisfactory to have to discard the can after using it only once, as is the case when it has to be cut open to get the wax out. This simple wire handle makes the use of five-gallon cans practical for wax. If the wire is laid fairly close to the sides of the can it will be near the surface of the cake after it has hardened and can be pulled off without any trouble.

Bath, N. C.

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DO YOU? I DON'T.

C. H. Pease

June is the month of the two SS: swarming and supering.

Do you, or any member of your family, spend hours watching for swarms, to prevent them from absconding, and then later find that they had "beaten you to it"? I don't, and they don't leave me, either.

You may look over your bee yard every five minutes and not see a swarm, but in one second after you stop looking a swarm may start out and in the interim of five minutes, before you look again, they may be all clustered and quiet outside of your range of vision on the back side of some bush or tree; if you see them at all it will probably be when they break cluster and start for their new home, and you can't stop them. They did it with me several years ago. I don't like to care for bees the whole year and then have them store their crop of honey in some tree in the woods instead of in my hive.

Do you use Alley traps to save your swarms? I don't. I have made a study of traps the past ten years and have spent many hours laying on my "tummy" watching swarming queens trying to get out of Alley traps, and have seen them go back into the hive without going up through the cones. I have also seen them go up and then go back down through the cones after they found they could not get out of the upper compartment. But worst of all, I have known of their going into the top of an Alley trap, and, being so obscured among an army of drones that they were not discovered, dying there, leaving the succeeding virgins to "follow suit" when they try to go cut to mate, with the result that a good colony was transformed into a useless bunch of laying workers. No, I have no use for an Alley trap.

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Do you believe that a properly made trap interferes with the bees passing in and out of the hive? I don't. My observation tells me that this theory is all bosh. After a few hours, when the strangeness and curiosity of the contraption has worn off and the bees get acquainted with "the brute" they slide through the bars like nothing. This does not apply to traps in which the bars have been all choked up with propolis. If you throw your hat, or anything, against their entrance the bees will act the same way until they get accustomed to it. To back up my statement I will quote from an editorial in Gleanings, June, 1924, page 383: "The bees soon become accustomed to the trap and pass through the openings readily;" also in the same issue, page 355: "Bees being compelled to creep through the small openings in the excluder, experimental evidence thus far indicates that this does not constitute a barrier to the bees." The claim that a trap interferes with ventilation in hot weather is doubtless true with a small entrance; however, with the large entrance that I use (approximately 24 square inches open) there is ample ventilation. But swarm control is too long a story to discuss in detail here.

Do you trust your memory to tell you which colonies are running for comb honey and which for extracted? I don't. The hand-holes in all of my comb supers are painted bright red and those in the extracting supers are white. I can tell at a glance just how many supers of each kind are working, and where they are.

Do you number your hives? I don't. I number the covers. During the season's manipulations, the hives may be moved, as in uniting, for instance, and your numbers go with them, but my covers always stay with the stand, regardless of what happens to the colony, and my record book keeps tabs on the colony and all manipulations. My apiary is arranged in rows of ten hives each and every stand always retains its own number.

Do you locate your hives in regular rows, side by side, and close to each other? I don't. My rows of hives are nearly twenty feet apart and the hives are spaced ten feet apart in the rows, and are alternately "staggered", one facing east and the next southeast. And to further help them to know their own homes, and to prevent drifting, the hive weights are painted different colors, using four of the colors known to be recognized by the bees (blue, red, white, orange), and a small "color board" to correspond is fastened to each concrete stand immediately in front of the entrance. I have never been troubled with drifting and I believe that these precautions help to steer young queens into their own homes when returning from their mating flights.

Canaan, Conn.

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COUNT THE QUEEN CELLS

Ben P. Edgerton

"Golden" Italians are often accused, well, you might say, of being Cyprians under an Italian name. Mr. J. F. Diemer (page 774, December Gleanings) is inclined to think that way. This idea seems to be based on the premise that Cyprus produces very yellow bees. Now I know nothing about "goldens" except a colony or so I have seen at fairs. These did not remind me in the least of the Cyprians and near Cyprians I kept for about 12 years.

Cyprians from Cyprus queens, looked at from above, show three broad bands of deep orange, two or three shades darker than the palest Italians. They would be disappointing to someone looking for very bright bees. The fourth band usually shows only when the bees are fairly full of honey. In the first cross Cyprio-Caucasians I got from Benton, most of the workers had bands just as broad and much lighter, more the color of bright Italians. But when these were crossed back to pure stock the bands assumed the deep Cyprian color. Incidentally I believe any such cross a bad one. They retain the Caucasian love of gluing down their frames in front, and if these happen to break loose with a jerk the Cyprian in their nature flares up.

I believe the cells at swarming time are the most reliable test of Cyprian blood, away ahead of color or crossness. All you need is to be able to count, say, to 100. I counted to 196 once. That colony was a freak and caught my eye as soon as I opened up the frames. The next highest count was 124. But 80 to 100 cells is not so very unusual and I would guess an average number

around 50—that is, under Northwestern Ohio conditions. Benton gives 30 or 40 as the ordinary number, but we have quicker, heavier flows in the Buckeye State.

These counts apply to bees I assume were 75% to 90% Cyprian. Sometimes colonies got crossed with the then-common blacks or with Italians as judged by color or fatness. These, too, seemed to have oodles of cells. So I cannot conceive of bees having much Cyprian blood, unless it shows up in their queen-cell building.

Cyprian Characteristics

This race has various oddities of behavior which might or might not be useful in identifying that blood in strains of Italians. They shake very easily from combs, and when so shaken lose their colony fighting spirit and can be dished or funneled into nuclei with no trouble and no stings. Their handling is helped by the fact that they cling less to surfaces than other bees (especially Italians). But if a colony gets real mad they hold desperately to clothing. The poor manipulator can blow clouds of smoke till he chokes but those Cyprians will still hang on, trying harder than ever to sting. All he can do is to run for the cellar, where their tendency to fly for the light will rid him of them.

Blowing smoke into a Cyprian entrance has little or no subduing effect. And there is a chance they will come back—fighting. On the other hand, it is only a slight breach of Cyprian etiquette to stand squarely in front of their hive. They float around the obstruction with the greatest of ease, much like the man on the flying trapeze. And are less likely to sting than other bees under the same circumstances.

While, I fear, all Cyprians have great powers of resisting smoke and put up an awful fight if once angered, they are very variable as to the amount of jar it takes to start them going. I think it might be possible by careful breeding of the pure race to eliminate the hair-trigger colonies. But I would prefer the other fellow did it as the process might be long. This could best be accomplished by the beekeepers of Cyprus if a large number would modernize and cooperate to requeen the oversensitive colonies.

Most colonies of this race will stand well for ordinary (but not rough) handling. When Cyprians are good they are usually very good. They don't buzz around or threaten the manipulator. They are steady on the combs and the queens are easily found. If one wishes to work with a leg in front of the entrance they do not object. So they are as easily handled in groups of four as any way.

I am only a very small scale farmer beekeeper and like to tinker with a new race, but have no Cyprians now; they swarm too much.

Hicksville, Ohio.

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GETTING THEM OUT

J. B. Stuyvesant

We have an oak tree close to our house which has a cavity inside of it extending several feet up and down into which there are two holes, one of them about three feet above the other, the lower one being about 12 feet above the ground. Several times in the past bees have taken up their abode in this tree and I have gotten them out by placing a nucleus near one of the entrance holes containing a frame of honey and one of brood with some eggs so that they could raise a queen if the swarming queen failed to come out, then putting a bee escape or an inverted funnel of screen wire over the hole nearest the nucleus and plugging the other hole up tight. When the bees came out and could not return they joined the nucleus and if the queen did not come out to join them, that was just her hard luck and they raised another from some of the eggs. But that method sometimes took two or three weeks to get all the bees and last year I did not wish to wait for such slow results or be bothered as much as usual; neither did I want them so close to an occupied cabin which was near by.

Several years ago I took off a lot of honey by using carbolic screens, (which method, by the way, I have discontinued), and as I had some of the acid still on hand, I simply placed a nucleus, prepared as usual near their entrance, and after soaking a rag in the acid I poked it into the upper hole with a stick and let it fall down among the bees which had just entered the tree. When I puffed some smoke into the lower hole there was nothing slow about the way those bees got out of that tree. As they had decided to make

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it their home, they did not leave but quickly joined the nucleus and I could take them where I pleased and be done with the job.

I do not care for the acid method of taking off honey, for it certainly will flavor some of the honey sometimes, but it surely will persuade bees to vacate a confined place where they are not wanted if it is properly applied.

Alpine, Calif.

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COMMENTS ON THE MAY ISSUE

C. M. Isaacson

To C. H. Pease (pages 296 and 297) I must say I **do.** That is, I do locate the bees in the shade. If not for the bees' comfort, then most certainly for my own. His locality may differ but here I would certainly hate to work hours under a midsummer sun (with the temperature in the "nineties" or above as it often is in July) so I **do** put as many colonies in at least partial shade as possible. Yes, bees will manage to keep cool without shade—they are wonderful air-conditioners—but why keep a large number of the working force so doing, when a smaller number would suffice? Your early morning advantage will soon disappear. Naturally a very dense shade is not desirable but a "leafy" effect is.

His suggestion for clipping queens' wings is a good one, unless as he says, you strike some especially lively ones. With a little practice, one can quickly grasp these by the wings with the right hand, transfer to a firm "leg" hold in the left, and pick up and use the scissors with the now free right. I have never hurt a queen by so doing but I did have one perish when an angry worker stung her just as I picked her up by the wings. What possessed the worker I do not know—maybe she thought the queen's place was in the home—or probably she was just plain mean-natured.

I agree with his early spring examination. I always do likewise, and wonder if, as well as concern for the bees' condition, a touch of bee fever does not grip us. At any rate I know it doesn't hurt the colonies and often helps.

The editor (page 300) surely is correct in his inference that low prices for honey do not always mean sales. We have a small local market and find that while a few purchase from the always present price cutters, quality is the main thing demanded by most. I have often wondered if poor quality of minor lots and the weak buying power of the consuming public is not more to blame for low prices than the price cutter.

J. L. Byer wonders (page 307) about greater honey consumption of his colonies the past few years. Might it not be that natural improvement in methods after his years of beekeeping, together with probably also better queens, make for larger fall colonies, who naturally consume more stores? As to winter brood rearing I certainly agree with him. My limited experience confirms his much larger period that it is decidedly bad. There may be exceptions (in localities with shorter, milder winters) but with long cold periods bees need to conserve **all** their energies.

On page 311, the inspection fee part of the new North Dakota law sounds O.K. to me. I would not object to this feature in our own state, but I must confess that the licensing part does not strike as pleasant a note. Maybe I am too old-fashioned, but the idea of requiring a license for conducting an enterprise which interferes with no one else (such as beekeeping) seems a step the wrong way. This practice of licensing can too easily be carried to extremes. Let us have the inspection fee—it will help to stamp out AFB—but as to being licensed—no. I have seen no copy of the law, though, so I may have a wrong idea as to it.

Mr. Dunham's article on pollination is very good. His mention of the influence insects have on the **quality** of the fruit (through pollination) is especially interesting to me. My apiary is located in a pasture where many small berry bushes abound, especially one with purplish black fruit known here as a Juneberry. Now for many years I have noticed that while the quantity of fruit is at times as great a long ways from the bees, the size and quality gets decidedly better the closer one approaches the apiary. The berries immediately adjacent were very large and fine flavored.

I hope all Gleanings' readers found the May issue as interesting as I did. It arrived on a rainy day and before night I had digested it "from cover to cover".

Middle River, Minn.

LOST ART OR ILLUSION?

S. W. Michener

In my boyhood, the idea of the family turning out to bring a rising swarm back to the hive by rattling tin pans was declared absurd. It was only an emergency expedient at best. Scientifically removing the incentive to swarm apparently relegated the old-time noisy procedure to the category of witchcraft.

However, a few years ago, out of dire necessity, I successfully resorted to a modified noise-making experiment. It was in 1932 at Peace River Crossing, Northern Alberta. The honey flow was at its best with my little apiary developed from Southern package bees. Whether from inherited tendency, or from inability to become properly acclimatized to the rush of the long sub-arctic days, or whatever the cause, those bees simply wouldn't stay put. Queen cells seemed to develop faster than in lower latitudes. They wouldn't conform to any rules of swarm prevention I had ever known, and swarm they would.

It wouldn't have been so bad had there been low growth for them to light on. But the nearby slender balsam and poplar grew close and had shot up some thirty feet without branching. Having lost a swarm or two and hived a few from the tall tops by sawing the tree partly through at the base and bending the top low, I determined to prove or disprove the noise theory. When next a swarm rose I was on hand with a wash boiler. Standing directly beneath them I kept up a rapid regular beating producing rolling reverberations. They gradually descended and entered the hive, giving opportunity to take extra precautions against swarming. This experiment was successfully repeated on two other occasions—once when the lower part of the swarm was full thirty feet in the air.

I conclude that though bees do not seem to have organs of hearing they must be sensitive to air vibrations. A swarm will return to the hive when a spray of water is made to fall on them. To them that's rain, even if the sun is shining. Continuous air vibrations may seem too much like thunder and bees are such sensible creatures as to require normal conditions for their various operations. Is there any record of the beating of a drum having been tried for such an occasion?

Cleveland, Ohio.

Colonies run for scale hive records, and others in the background are of all sorts and shapes and are used chiefly to demonstrate how "not to". I have NOT kept bees for the last forty years, but I have kept them long enough to find out that simple, standardized, efficient equipment is essential.— H. Dinwoodie, The Knole, Ashley, Ringwood, Hants, England.

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MID-WINTER BROOD REARING

H. J. Rahmlow
Secretary, Wisconsin Beekeepers' Association

On page 308 of the May issue, Mr. J. L. Byer of Markham, Ontario, gives his impressions of our article in the March issue on "Mid-Winter Brood Rearing." We had the pleasure of meeting Mr. Byer last September and found him a good practical beekeeper who has produced large crops of honey. He makes the statement that the late William McEvoy used to say "Winter brood rearing costs the lives of three old bees to rear one young one." He adds, "I do not think he was far out in his estimate."

Inasmuch as there are no facts to prove this statement we are inclined to call it "fireside experimenting." There is much of that among us beekeepers. I have done a little of it and perhaps you have too. We are not equipped to carry on accurate experiments, so we sometimes do it by the fireside "thinking things out."

Don't Jump at Conclusions

Often, too, when we observe something unusual in the apiary we may come to conclusions not based on facts. In this connection a story by William Stephan of Ottawa in the March issue of the "Canadian Bee Journal" is quite to the point. He says: "The story is told of the research student who had a hangover from over-indulgence in whiskey and soda. On a second occasion an equally bad effect was the result of brand and soda. A third bout with Bacchus left him similarly indisposed, this time with gin and soda. The student then reasoned that, since he had taken soda on all occasions, soda was the cause of the trouble."

If it took three old bees to raise one young one in mid-winter, then naturally a colony that did raise brood in mid-winter would come out very weak in the spring. There is, of course, definite proof that this is not true.

In this connection we want to refer all practical beekeepers again to the article which appeared in Gleanings for May, 1934, written by Dr. C. L. Farrar, giving results of an experiment conducted on this subject, at Laramie, Wyoming.

Briefly, in this experiment the population of ten colonies was carefully determined on October 12. One group was then given only sugar syrup; another honey; a third, honey with two guarts of pollen; a fourth, honey with about 160 square inches of pollen; a fifth, honey with slightly over 600 square inches of pollen.

Six Italian queens were replaced with Caucasians after the close of brood rearing to show the effect of brood rearing on surviving population.

Winter Brood Rearing Increased Strength

On April 18th the colonies were inspected. The one on sugar syrup alone had about **one quart of bees,** while the colony with 600 square inches of pollen in the fall had bees clustering over 10 combs.

It is also important to note in this experiment that **all colonies had exhausted their supply of pollen by the first week in April.**

On May 17th the population of each colony was again determined. No pollen had yet come in from the fields. Here are some results of this experiment. (Note: To be brief we give figures on one colony in each group. Others were similar. See table in article referred to above).

Colony fed on sugar syrup only without pollen had about 24,000 bees in the fall and 10,400 in the spring. Colony with honey stores but without pollen had 28,830 bees in the fall, and 12,930 in the spring.

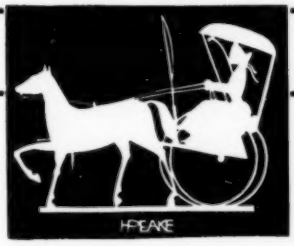
Colony with honey and 2 quarts of pollen had 28,560 bees in the fall and 18,470 in the spring.

Colony given 600 square inches of pollen had 28,720 bees in the fall and 26,450 in the spring.

In all cases populations in the spring were in direct proportion to the pollen reserves. Colonies given Caucasian queens had Caucasian bees in proportion to the pollen reserves—**proving winter brood rearing increases colony strength** rather than reducing it.

In a later article appearing in the September, 1936, issue of the American Bee Journal, Dr. Farrar gave the results of further experiments along this line, showing similar results. It was also found that the colonies wintered with ample pollen reserves replaced a large proportion of their winter stores during the dandelion flow, while colonies wintered without pollen lost weight or failed to show any gain during the same flow. The age as well as the number of surviving bees in colonies provided ample pollen reserves gives them a tremendous advantage.

Madison, Wisconsin.

Spinster  Jane Says:

Spring is very late this year, and right now we are having the first big rain of the season. It was badly needed and has made the grass vividly green and is hustling the bursting buds along. Clover, the beekeeper's most important growing crop, promises well.

I had a very nice, very beautifully-written letter, a short time ago, from a lady in Quezaltenango, Guatemala, Central America. Of course it pertained to bee affairs, not honey-production, though, but to bee-stings. This lady wonders why bee-stings have such a serious effect upon her while the others of her family are not at all so affected. She would be surprised if she but knew how ignorant I am when certain bee-questions are discussed.

A year or two ago, I wrote the "Family Doctor" who conducts a page in the Farmer's Advocate of London, Ont., asking why not try bee-stings as a cure for rheumatism with her patients. Her answer at first surprised me, but now I think I understand. She said she was afraid to do so and judging by certain effects of bee-stings upon certain people, I do not wonder.

A nephew of mine, when stung, is seriously affected. His whole body puffs up, his eyes almost close and he becomes deathly sick.

A second case was that of a small girl my father took from a Scottish Orphan's Home. She, when stung, broke out in large red blotches, all over her body and was very sick. We were advised by a doctor to keep brandy or some strong liquor always in the house, to give to counteract the poison in her system,—the bee-venom. This restored her every time.

Now, I'm strictly a Temperance woman, so do not get me wrong. Such liquor as a medicine, and in its right place—which is only in the medicine-cabinet—is all right. Anyplace else, it is all wrong. Call me old-fashioned, narrow, strait-laced, what you will, but "Them's my sentiments."

Perhaps it isn't wise of me, even to state this remedy publicly. Men do like an excuse, sometimes, to imbibe too much, and now perhaps some of the species may say, when reprimanded by friend wife, —"Spinster Jane advised it." Ever since Adam began it they have the same old excuse, "Blame it on the woman."

We can only explain this curious effect bee-venom has on some persons, by certain other poisons. Certain things, poisonous to one person, agree perfectly with others. For example: I know one man, a returned soldier, who cannot eat eggs in any shape or form without becoming very ill. A certain lady thought this all pretense, so made a cake using eggs in it and gave him a generous portion. He, thinking it eggless, ate it. The resulting sickness convinced her it was no pretense. Some people cannot eat strawberries, some certain other foods. A neighbor, living very near us, occasionally has his lips swell and his eyes puff up nearly closing. He went to the doctor who examined him, then stated, "It is due to something you are eating." What that something is, he has not yet found out.

When something acts that way with us, I fancy it is much better left alone, even though it may be the bees we like so well. Time and countless stings may make us immune, but since the Family Doctor said "I am afraid," she surely must know. My advice would be, keep your distance from the bees. Let someone else be exposed to those deadly stings. You see they might prove just that.

A lady near us wants to try stings for her rheumatism but in her case it would be sheer suicide, I believe. Her heart is very very weak, and the shock would be really injurious, I feel sure. That Family Doctor's words are like the sign to motorists, "GO SLOWLY."

Before the year is too far advanced, Spinster Jane hopes to personally answer the several interesting letters she has received. Just at present, she is a busy person, which is as it should be. We might degenerate into female drones.—Spinster Jane.

XUM

Editorials

Some of the honey produced last year, because of frequent rains, was too thin and buyers refused it. Be wise and leave the honey on the hives until it is well ripened.

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A scheme to tax bees at the rate of $5.00 per colony, as proposed at Coatesville, Pennsylvania, seems to be absurd on the face of it. Apparently it is an effort to "beat the devil around the stump". The Mayor of Coatesville, E. R. Bergstrom, admits that any ordinance forbidding the keeping of bees inside the corporation of a village or town would be unconstitutional, so he proposes to levy a tax of $5.00 per colony, a tax equal to the value of the bees.

It is our opinion that the Courts would hold this action to be unconstitutional in more ways than one.

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Inspection of Honey Extracting Plants Inspectors of the North Dakota Regulatory Department require adequate standards of cleanliness and sanitation in plants or factories handling foods. This means that all honey extracting and packing plants are subject to inspection.

Similar inspection in other states would do much to improve the quality of our product. The time is doubtless coming when honey extracting plants throughout the country will be thoroughly inspected and this will be as it should be.

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Cool Weather Stopped Early Brood Rearing On March 23 bees in this area were collecting pollen. This gave brood rearing a good start. Later, during the most of April, cool cloudy weather slackened brood rearing. A letter from a western Ohio beekeeper dated May 6, 1939, contains the following: "Bees are coming along now in good shape. Twenty-two days in April gave us two days in which we could work with bees and left them in poorer shape so far as brood goes than they were March 1."

This condition prevailed quite generally over the North, so far as we can learn, and it emphasizes the importance of having ample food—honey and pollen—in each hive so that brood rearing may not be curtailed to the point where spring dwindling occurs.

A superabundance of combs containing honey and pollen supplied to each colony in the fall is the solution to the spring dwindling problem.

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Upper Hive Entrances for Summer Use During the past year or two, we have had a number of editorials referring to the use of winter entrances near the tops of colonies, such entrances being about ⅝ of an inch in diameter and located midway in the top super or food chamber.

Very recently, H. H. Root, otherwise known as "Huber", our movie fan, took a picture of bees going in and out of a top entrance in a pile of supers. Many of the bees, instead of using the lower entrance, seemed to think it more convenient to use the upper winter entrance, to which they were accustomed, and so they were flying in and out at the top, and why not?

When supers are staggered, one forward a half inch, so that bees can fly out from the back near the top of a pile of supers, they will seldom use those openings, because they are only a temporary expedient to allow the hot air to escape. When, however, there is a small entrance in the top of a food chamber used all winter and spring, the bees are apparently quick to avail themselves of this short way out and in. Our movie shows that many of the bees were busy going out and in the upper entrance, neglecting the usual entrance at the bottom.

This past season we experimented on a few colonies in making a ⅝-inch auger hole in the front of the bottom super just above the queen excluder placed over the double brood chamber. We were surprised at the number of bees that used that entrance. Those bees saved themselves a lot of time and labor because they did not have to travel by way of the main bottom entrance up through the double brood chamber and the queen excluder into the supers.

Entrance Diagnosis

As has been pointed out in these columns and in the A B C and X Y Z of Bee Culture a number of times, it is possible to determine which colonies have the most honey on their hives by the activity of flying bees at the entrance. If they are seen to be going in and coming out very rapidly, it is pretty evident that that colony is storing honey, and the amount of storage will be in proportion to the number of flying bees, going and coming from the field. There will be some variation in bee flight where there are 25 or more colonies.

Again, at about dusk or later, one may determine how much the colony has done by noticing whether the bees are fanning at the entrance to ripen the honey. When a colony has gathered a large amount of nectar in a single day, this fact will be made very apparent if one will watch the bees at the entrance. There will be one group fanning moist air out of the hive on one side and another group fanning dry air into the entrance on the other side. Sometimes a current of air comes out on both sides, but enters in the middle.

It is well to observe that where there is a deep entrance, ⅞-inch deep by the full width of the hive, the position of the fanners is not so evident as where the entrance is full width but only ⅜-inch deep. The reason is that the bees are farther back.

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The Proposed U. S. Census for 1940

The census figures covering our industry for the last four decades have been, not only grossly inadequate, but misleading. Dr. E. F. Phillips, at one time in charge of bee culture investigation work, and later his successor, James I. Hambleton, just before each decade since 1910, have been trying without success to broaden the scope of inquiry so as to take in all bees and beekeepers wherever located as well as those on farms. The former census figures covered only bees on farms of three acres and over, but left out entirely the great bulk of honey producers in towns and cities.

Both Phillips and Hambleton showed that the census figures covered only about one-fourth of the beekeepers, and did not take into consideration the large commercial producers who furnish the bulk of honey produced in this country.

As a result of numerous interviews and many letters, Mr. W. F. Callander, Chairman of the Crop Reporting Board of the Bureau of Agricultural Economics of the U. S. Department of Agriculture, writes:

April 27, 1939

Mr. E. R. Root,
Editor, Gleanings in Bee Culture,
Medina, Ohio.
Dear Mr. Root:

Referring to your letter of March 16, I may say that the Advisory Committee of the Census has practically completed its work and is including in the agricultural census three questions on bees:

Hives of BEES, April 1, 1940:
1. OWNED BY OTHERS, but kept on this farm. . . Number ———
2. OWNED BY YOU, on this farm, and on non-farm land such as deserts, hills, swamps, etc. . . . Number ———
3. HONEY produced by **your** bees in 1939. . . Pounds ———

The Committee has also recommended that an agricultural schedule be used in cities, towns, and villages in which will be included questions on hives of bees owned by residents of cities, towns, and villages, wherever located. If we are successful in getting such a schedule started, it should give a fair survey of the bee situation.

Very truly yours
(S) W. F. Callander
Chairman, Crop Reporting Board

This letter is significant in that the Census Agricultural Advisory Committee has definitely recommended that an agricultural schedule to include bees and other livestock be used in cities, towns, and villages. That is just what has been needed. It is now up to the States and to the individual beekeepers to let Mr. William L. Austin, Director, Bureau of the Census, Washington, D. C., know that they want this town schedule approved. This schedule, in addition to the regular agricultural schedule, should make it possible to count every colony of bees in the United States.

Inasmuch as the Bureau of the Census may in turn be dependent upon the Congress to provide funds necessary for conducting a livestock census, including bees, in cities, towns, and villages, senators and representatives should be asked to support the matter before the Committee on Census of the House, and before the Committee on Commerce of the Senate. Officers of beekeeping organizations in particular should write to the Bureau of the Census, Washington, D. C., and to members of the Congress urging that the supplemental schedule be approved. This is our last chance for another ten years to obtain a complete enumeration of bees.

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Importance of Good Queens The old saying, "The queen is the soul of the colony," is everlastingly true. The problem of keeping all colonies headed with really good queens is one of the biggest problems confronting beekeepers today.

Some beekeepers make a practice of requeening annually. We used to follow this practice in our apiaries by requeening in the late summer or early fall, removing all queens, good and bad and introducing young laying queens. We no longer follow this practice, but we do aim to replace all queens that show signs of failing. We requeen continuously rather than annually.

We do not advocate this for all localities. Each beekeeper should adopt a system that best fits his location. The main thing to keep in mind is to keep each colony headed with a prolific queen, one that produces bees superior in honey-gathering qualities.

The late Dr. Miller gave some sound advice when he wrote the following to a young beekeeper asking for advice on requeening: "My young friend, for best success get pure stock, keep tab on every pound of honey taken from each colony, then breed from the best stores that are all right in color and temper." Dr. Miller gave this advice on January 31, 1916.

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Ordinances Against Keeping Bees in Towns Unconstitutional Thousands of colonies of bees are kept in towns and cities throughout the country. Unfortunately some cities and towns are attempting to compel beekeepers to move their bees outside of city limits. This may be due to the bees causing disturbance and perhaps stinging people or animals. Possibly some owners of bees have not used good judgment in handling their colonies. When hives are opened during a dark day or too early in the morning or too late in the evening, when the bees are not working well, they naturally resent this and are likely to cause trouble in the neighborhood.

It behooves beekeepers to manipulate their hives intelligently. Furthermore, hives should be properly located a reasonable distance from the street, in some spot surrounded by a hedge or high fence so that the bees are compelled to fly up and over in order to avoid coming in contact with humans or animals.

There is another angle to the solution of this problem, viz., keeping bees that are reasonably gentle to handle and not vicious. This problem is something for bee and queen breeders to work on. Just how to produce a strain of bees that combines gentleness and industry is not easily answered. But this question must be answered, especially as the country becomes more thickly populated and more bees are kept.

It would be a sorry day for gardeners and fruit growers in towns and villages if bees were banned. Comparatively few people realize the benefits of bees to orchardists and vegetable growers.

Regarding ordinances or sections of ordinances forbidding the keeping of bees within the limits of cities or villages, we draw attention to the fact that several superior courts in the United States have declared that ordinances to such an effect are unconstitutional and, therefore, null and void. The Supreme Court of Arkansas declared that "neither the keeping, owning or raising of bees is in itself a nuisance". We refer to Arkadelphia vs. Clark, 52 Ark. 23, 11 S. W. 957, which is a case in point. This particular case was decided in 1889, and a report and history of it was published by Thomas G. Newman, then General Manager of the National Beekeepers' Union, for free distribution to the members. There was a similar case in Rochester, New York, in 1901 and the ordinance was declared unconstitutional. Again in the case of Olmsted vs. Rich, 23 N. Y. S. R. 271, 6 N. Y. Supp. 826, a decision was handed down to the same effect. Still again, there was a case at Holmesburg, Pennsylvania, in 1934. Judge Harry S. McDevitt denied an injunction to restrain Joseph Rexer from keeping bees on his property. In 1934 Assistant Attorney-General of Minnesota, David J. Erickson, ruled that an ordinance declaring bees a nuisance and excluding them from the city cannot be legally drawn and so notified Wm. R. Mitchell, city attorney at Tracy, Minnesota.

With a better understanding between the general public and beekeepers and proper cooperation the difficulties now being experienced in some few towns can doubtless be ironed out.

From North, East, West and South

SOUTHERN CALIFORNIA, May 1.

Weather: A much used topic for conversation in Southern California especially during the early spring months, is weather and we have had it during April in a most delightful way so far as comfort to the individual and satisfaction to growing things are concerned. Oranges began blooming about the usual time April 10. Cool, with clouds or high fog during the day, and nights cool to almost cold, was the rule most of the time.

The last three days have been better and colonies show some gain in weight. Orange bloom one-half or more past and beekeepers predict a very short crop from that source. There has been no rain since our last letter and the chances for more this spring are very slim.

Honey: Prices have changed very little since our last letter. Brokers write that they have quoted lots to eastern buyers and if order is received they may be able to use honey at (?)—we hesitate to say how low a price. There is so little old honey in the hands of the producer that it makes little difference to the beekeeper, but what is it doing to our prospects for selling the light crop that we hope to make in 1939?

Beeswax is also hardly holding its own in price when in ordinary seasons there is a demand at this time.

Crop Prospects: Beekeepers are great people to hope and the season thus far calls for all the reserve we have along these lines. Beekeepers who left their colonies with plenty of stores found their bees in the best condition ever this spring. Hives were overflowing with bees at a time when honey should have been coming in from the fields. Too cool. Fifteen or twenty degrees warmer and we might be telling a different story.

Miscellaneous: We were not a little surprised when we read lately that the duty on honey had been reduced to 1½ cents per pound with an even lower rate from Cuba. Who puts over these reforms on us unsuspecting producers without our knowledge? Have we ceased to be a part of the country to be considered? With beeswax on the free list and honey fast getting there, and both products so low in price that the beekeeper only stays in business because he cannot get out, we sometimes wonder how it is all going to end.

It has been estimated that about 800,000 people in these United States keep bees. Of this number perhaps 100,000 people expect the bees to keep them; that is, they expect to get a part or all of their living from the product of the busy bee. Possibly fifteen per cent of these have one thousand or more colonies each and are in the business as an exclusive means of gaining a livelihood. This leaves about 85,000 people who hope to gain at least a goodly part of their living from the bees. We feel safe in saying that not to exceed twenty per cent of these last mentioned read a bee journal or even attempt to keep posted on markets, prices, or what is being done with the honey which they have labored to produce, after it has left their hands. And why should they? We, particularly of the West, have grown up under an environment of so-called freedom that seems to be nearing a realignment of many of our ideas if we are to carry on and meet the ever changing rules of the game.

European foulbrood has shown up in a number of yards where it has been unknown for years. Why this should happen we are unable to understand. Is it the weather, a lack of early nectar to stimulate the queen and production of young bees, the over-crowding of colonies with an abundance of stores, or what have you? Who can tell? What say the extension service?—L. L. Andrews, Corona, Calif.

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NORTHERN CAIFORNIA, May 5.

Weather: Our long looked-for rain did not come so we make the best of the situation and go on. The rainfall in this part of California is far below normal. Farmers suffer far more than beekeepers, pasturage is very short. The same is true of all kinds of grain. Fortunately for beekeepers the honey flow in the Bay Region comes early and beekeepers who keep bees better have extracted their first crop and moved their bees for the second crop. Reports coming in today on results of first move are more encouraging.

Some sections of the North have been favored by more rain and still others by

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snow. So take our entire field and we find beekeepers still hopeful for a 1939 crop.

Markets: Marketing conditions are slightly improved. At least the beekeepers who have to sell and bring in their honey risking a chance to sell do find a buyer. So far not one complaint has come from a beekeeper that he could not sell his honey. Having been used to low prices may account for his happier state of mind. Anyway, beekeepers are all busy with their bees attempting, if possible, to produce more honey in 1939 than they did in 1938.

We may be wrong, but it does seem that the surplus honey in the hands of producers has greatly decreased. Can it be that the extra effort we have made to advertise honey is so quickly showing results? Let's believe we are gaining and keep on.

Miscellaneous: There is one thing we can be sure of and that is that our exhibit at the Golden Gate International Exposition on Treasure Island is attracting more and better attention. One of the leading commercial beekeepers of Wyoming came in to tell us that he had visited the exhibit and thought it was the prettiest exhibit he had ever seen. Though very busy, he made the second visit to find many additions had been made which he believed would result in making a stronger appeal to the visitors to use honey.

There is a slight advance in prices for beeswax and there is a marked improvement in the way beekeepers are caring for their wax before offering it for sale. This is good and makes us feel sure we will see as much if not more improvement in the care of honey before it is offered for sale.

As the summer advances we are looking forward for still more cheerful and encouraging reports from beekeepers and their products.—Cary W. Hartman, Oakland, Calif.

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TEXAS, May 2.

Weather: In April there was a continuation of drouth which has lasted for eleven months over much of Texas. During the last week in the month the weather conditions made a change for the better in the northern half of the state. The southern half of the state is yet so dry that no farm crops have any prospects of making a yield. In most sections the deficiency in rainfall is about five inches for the present year and nearly ten inches for the drouth period.

Conditions: No honey flow of any consequence has occurred since July, 1938. As a result the bees went into winter with few stores and few bees. An abnormally even winter allowed the bees to come through in good shape; however, the increasing drouth did not allow sweet clover, horsemint, or any of the other winter annuals to grow. The lack of cold and moisture forced all plants native to semi-arid districts into bloom very early and this blooming season was completed in a very short time. Plants such as agaves and cacti which usually bloom in May or June finished the first of May. Mesquite, true to its record of yielding after dry falls, came into bloom the first of April over a large portion of South Texas. Where the bees were ready, surplus up to one hundred and fifty pounds to a single colony was reported. In some locations reports of yields from guajillo and catsclaw say that about half a normal yield was produced.

All of these honey flows are now over and have occurred much before the normal time of the spring honey flow. The future activities of the honey plants is very evident. The only chance for a second flow is from mesquite and cotton. In South Texas it is too late for a cotton flow so that any future flow must come from mesquite. Due to the fact that there is no indication of any honey flow during the season of 1939 beekeeepers should take but little honey from their bees as it is doubtful that there will be another flow to give the bees a sufficient amount of stores to go through the summer and winter. So far as can be ascertained the flow from mesquite is the earliest and heaviest in the memory of old-time beekeepers.

Miscellaneous: If the beekeepers do not have a crop to harvest, they can attend the annual meeting of the Texas Beekeepers' Association. Many beekeepers who formerly attended the sectional meetings in northern and central Texas have all promised to be present. Every beekeeper in Texas or elsewhere is invited to be present at Waxahachie, June 23 and 24.—H. B. Parks, San Antonio, Texas.

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UTAH, April 27.

Weather: Fruit trees and dandelions are now well in bloom, and on warm days bees are bringing in pollen and nectar at a rapid rate, but there are many cold days when there is little field activity. Frequent frosts, severe enough to kill a large percent of the early fruit bloom have been reported, but there is

ample food to support brood rearing.

Condition of bees: Owing to the very mild weather during the early part of the winter, bees had frequent flights; but through February and early March there were 42 days during which time they were confined to the hive, even though the temperature at no time reached the normal low. The excessive activity during the early part of this winter lowered the colony strength so that the long confinement that followed resulted in heavy losses in some districts.

Smelter fumes and spray poison are charged with being responsible for a condition which could consistently be called Fall Dwindle. Some also claim that baits of poisoned bran set out for grasshoppers has added to this condition. The result of all these destructive forces is an unusual loss of bees, either by outright death of a colony, or a greatly weakened cluster. This applies to the state as a whole. There are a few exceptions where the winter loss is as low as three percent. Generally, brood rearing is progressing as rapidly as the strength of the colonies will permit.

Moisture Prospects: Precipitation over most of the state is far below normal. Reservoirs are not full, and several large canals will have no water for irrigation this season. With these facts before them some beekeepers are preparing to move their apiaries to the lower grounds where pumping is carried on. While nectar producing plants are now in good condition there is little doubt that they will suffer later from lack of irrigation water.

Market: There is a considerable amount of honey being held for better prices and the State Association has taken decisive steps to form a cooperative marketing association, having access to bonded warehouses where they can hold their surplus and obtain loans to bridge them over a crisis.

Honey will probably be graded and standardized to avoid a repetition of the present demoralized condition of the market. For example, in one large store the retail price of 10-pound pails varies as much as 30 cents.—W. H. Hendricks, Salt Lake City, Utah.

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OHIO, May 4.

Weather: Just as farmers do, beekeepers look forward to pleasant growing weather for crops, and now as I am writing this epistle we are still having pretty cold weather, for this time of year, over the entire state of Ohio. May was ushered in with a frost on May first with the temperature down to 31 degrees. This morning the temperature was 37 degrees with the wind still in the North. However, I have not heard of any great damage to crops or fruit.

Bees and Honey Plants: Clover in places, early in April, indicated very clearly that it suffered somewhat for the lack of a snow-covered blanket during the heavy freezing in March. It has settled back and taken root in fine shape in the past three weeks and affords a very promising appearance for a fine nectar flow later on. Precipitation for the year thus far is about one inch above normal in this state. Dandelions have made many fields, yards, and valleys take on a beautiful golden hue and are now at their best in this locality for pollen and nectar. Box elder and rock maple are just beginning to blossom. Red bud is just starting and wild crab-apple, shadbush (or service berry), wild mustard, and a host of other blossoms will be at their best within ten days. The woods are a blanket of wild flowers and will be for several days yet. It is equal to a vacation trip to visit outyards located in a wood-lot this time of year.

It is possible that this cold weather might defer the spring bloom sufficiently so that the intermission between it and the Dutch white clover bloom will be very brief.

In a conversation with our mutual friend, Charles Reese, he informs me that according to reports received so far this spring winter loss of bees over the state will not exceed 2% and colonies are generally in strong condition. Brood-rearing started exceptionally early and most colonies are exceptionally strong. Even during the past five days of cold weather the bees have refused to give up and have been coming in with a goodly quantity of pollen and nectar. Many of them were unable to get back to the hive.

Market: Considerable honey was held over by the producers in this territory until the spring market opened up. Right now I do not believe there is much more than 5% of the crop held by the producers. The low market price has removed honey from the luxury shelf to the commodity shelf and this has materially increased the consumption of honey in the homes. This is a splendid thing for the consuming public and by this method, we, the producers, are educating the general public to the many family uses of honey.

Miscellaneous: Have you noticed that with a single dollar you can buy almost as many groceries as one person can carry? Yes, we are living in a price age and honey must be relative in price to other necessary commodities. Therefore,

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the financial success of the producers, not only in Ohio, but other states, as we look into the future means more efficient management which will cut the cost of production and, perhaps, increase the yield per colony. It might be well in future meetings of beekeepers to give these two items more thought and discussion.—W. A. Coulter, Columbus, Ohio.

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NORTH DAKOTA, May 5.

Weather: Conditions have been favorable to date. The past winter was fairly moderate with ample snow cover to protect the plants and add moisture to the soil. While cool weather continued throughout April it did not affect colonies any more than to hinder flight. It was not until the past week or ten days that real warm weather began. It has brought out most of the early spring sources of nectar and pollen including maple, elm, willow, and some early fruit bloom. At Fargo, dandelion is just coming into bloom. Bees are gathering from all of these sources.

At the present time rainfall is being reported from several areas of the state. Spring seeding is rapidly nearing completion.

Colonies: Judging from reports received colonies came through the winter in very good condition. They appeared to have been well stocked with honey and pollen. This together with the moderate winter contributed to good wintering. Examination of colonies at Fargo lately showed them to have plenty of brood and to be building up nicely.

Clovers: While the condition of the clovers is not generally known at the present time it is believed that they are satisfactory wherever rainfall was fairly adequate during the past summer. This area would include most of the Red River Valley and the northern and northwestern parts of the state. Fields of sweet clover and alfalfa examined lately near Fargo were in excellent condition.

Packages: For some reason there seems to have been a lessened demand for package bees than for several years past. This is probably due to the better survival of over-wintered colonies and the lessened need for restocking of hives. In a few instances commercial beekeepers are bringing in large numbers of packages to increase their holdings despite the present low prices for honey.

Miscellaneous: A recent effort on the part of the State Pure Food Commissioner to inspect all places where honey is extracted is expected to increase public confidence in honey as a food. Only those places which are approved from the sanitation standpoint will be certified. In addition to this, samples of honey will be collected from stores and analyzed. The results of such analyses will be published from time to time in the commissioners' reports.

In conversation with a local doctor recently, he expressed the opinion that the medical profession would probably be quick to endorse honey, especially for babies, if there was proper certification that the honey was up to standard and was produced under sanitary surroundings.

Plans are underway for bee inspection to begin late in May. Recent word from the State Department of Agriculture at Bismarck indicates that the favorable response to the new bee legislation providing for licensing and inspection fees will make possible a more adequate inspection program than has heretofore been possible.—J. A. Munro, Fargo, N. D.

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MINNESOTA, May 4.

Weather: Although March gave us the usual amount of cold weather, it also gave us about a week shortly after the middle of the month when the temperatures were much higher than normal, with two days in which the thermometer registered in the 70's in St. Paul. This gave out-door wintered bees a chance for good flights in all parts of the state.

Precipitation was very good in March and early April, but the last part of April and early May has been dry, and just now when the dandelion and fruit bloom are coming out the surface soil needs much more moisture.

Condition of Bees: Most of the early reports indicate better wintering than last year. For the out-door wintered bees, the good flights in March must have helped greatly. The first estimates on bees wintered outside are made by counting the hives from which bees fly on the first warm days, and later estimates are usually much higher.

Miscellaneous: Minnesota was given an additional $1000 per year for its appropriation for bee-disease control. This came as a result of the concerted activity of the Minnesota Beekeepers' Association, and as an evidence of the confidence which the members of the legislature have in Professor A. G. Ruggles, State Entomologist, who has charge of

this work. Getting even a small increase in appropriation from a legislature pledged to economy, and at a time when support for most departments was being severely cut, is encouraging as a sign that the public is becoming more conscious of the value of beekeeping.

A new bee law was also passed at this session of the legislature, which is much the same as the previous one but with added provision for registration of beekeepers and it places the administration of the law definitely in the hands of the State Entomologist. The registration fees are as follows: 1 to 10 colonies, 50c; 11 to 50 colonies, $1.50; 51 to 200 colonies, $3.00; 201 to 300 colonies, $5.00; 301 to 400 colonies, $7.50; 400-up colonies, $10.00. The law also prohibits the spraying of fruit trees while in full bloom.

Dr. L. D. Leonard, one of the charter members of the Minnesota Beekeepers' Association, died at an advanced age on Easter Sunday.—M. C. Tanquary, St. Paul, Minnesota.

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ARIZONA, April 28.

Weather: The past two months we have had cool nights and mornings which have caused bees to build up very slowly. Most of the moisture received the past winter was in February. Rainfall has been light through March and April. Today it is cool and windy, the thermometer registering 62°. We had a light sprinkle last night but too light to do much good. More moisture at this time would help honey plants considerably.

Markets: Some of the largest lots of honey in the hands of producers moved to market during the past two months. Last month's government report states there is about 30% of last year's crop carried over in this state. I believe these figures are far in excess of the actual amount. The writer knows of a few scattered lots of honey in the hands of producers, and in no case are the amounts of honey large. If the government report is correct over one producer out of every four would still have his crop on hand and this is not the case, as far as I can learn from the producers themselves. I have not been over the entire state to check up closely.

Miscellaneous: As usual pollen was plentiful for bees to build up on early in the season. But bees have been very slow to build up along the Gila River at an elevation of 500 feet. The same is true in the higher elevations. Many had to feed to carry the bees until nectar started coming in. Due to bees being active most of the winter they use a lot of honey from one season to the next.

Extracting from mesquite usually begins in the western part of the state between April 1 and 15. But to date no honey has been extracted. Bees came through with abundant stores and there was no shortage of pollen. Under normal conditions they should have built up well. The mesquite started blooming around April 5. The bloom dried up a few days after opening. I do not know yet if this condition is local or general. Some areas favored with more moisture may get honey but I doubt if a normal crop will be secured from mesquite along the Gila River.

Due to present prices of our product, producers are not employing their normal amount of help or paying wages they would like to pay. When farm products go down labor is first to be cut out as far as possible. I suggest our Department of Agriculture show us how to have a decent standard of living and pay our help decent wages at the present price of our product. Right now thousands of farmers would like to know the answer to the above problem.—Leslie Wedgworth, Oracle, Arizona.

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VIRGINIA, May 4.

Weather: This has been a very unusual spring here in Virginia. The weather was very unseasonable the last of March, being almost like summer. Since then the weather has been cool most of the time. Bees have had to be fed, and they did not build up as they should. On May 2, eastern Virginia was visited by a hail and snow storm, and frost this morning. With all of these adverse weather conditions, bees are not ready for the main honey flow which is beginning in Southeast Virginia from gum and tulip poplar. I am very glad to say that the cold weather seemingly has not hurt the honey-producing plants.

Honey Market: There is not much activity in the honey market. Most of the honey is in the hands of the merchants and from present indications it will be enough to supply the demand until new honey reaches the market.

Miscellaneous: The number of colonies lost this winter and spring was greater than for many years. Most of it was from starvation and poor queens. However, some was from disease. In sections where the fall flow was good the winter loss has not been so great. Many packages of bees have been ordered to make up some of this winter loss. This is good

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business for the package producer of the south, but not so good for the beekeepers of Virginia. If the money spent for bees in the spring was used to requeen all weak colonies that had poor queens and to feed those short in stores in early fall I believe there would be stronger colonies and more honey than from packages. This might not be true for states farther north. It is a very fine thing to be able to get these packages from the South when you do have winter losses though. —H. W. Weatherford, Vernon Hill, Va.

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OREGON, April 27.

Weather: Oregon has experienced one of the longest dry and hot spells for March and April which has been known for many years. During the past week, however, the weather has been cooler with some rain in different parts, but has been far from adequate to assure a normal flow of nectar later on. The winter in general has been mild and honey plants are in good condition to date.

Honey Flow: The flow from broad-leafed maple is practically over, the bees having had almost four weeks during which to work it. Dandelions and fruit blooms are at their best. Common vetch and Hungarian vetch are about ready to supply nectar as soon as the weather again warms up. Bees in general are strong and in good condition.

Honey Market: Price cutting has been particularly bad during the last few weeks and honey has been moving very slowly, the price ranging from 35c to 55c for 5-pound buckets. Prospects are that a larger per cent of honey will be carried over this year than has been the the case for several years.—H. A. Scullen, Corvallis, Oregon.

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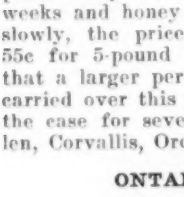
ONTARIO, May 2.



Weather: Another month of unusually cool weather for our locality has passed. Today, a cool North wind is blowing following a light frost during the night. Farmers are just starting on the land, fully three weeks later than a year ago. Snow covered the fields during most of April, and winter wheat and clover have come through in good shape. Locally clover is scarce except for old stands of alfalfa, as the season was dry here last year and many seedings of alsike did not "catch". While sweet clover was almost everywhere last spring this year we have practically none in evidence. Many left sweet clover for seed last year but the price is so low at present that it is doubtful if much or any will be seeded this spring. A few sow it for pasture but the acreage, unfortunately for the beekeeper, is decreasing each year. All things taken into consideration, the prospect for a crop of honey locally is not nearly as good as it was a year ago, and this coupled with the abnormally low prevailing prices of honey, does not augur well for the beekeepers' chances of travelling to Florida or California next winter.

Market: As to prices for honey, sales have been made recently at prices that establish a new low record for Canada. We notice that 2-pound pails are being retailed freely by chain stores at 17 cents each, and this honey bears the label of a well-known producer and packer of honey near Hamilton. After deducting the price of the pail—about 4 cents, allowing profit to packer and broker as well, net returns to producer could not be excessive, to say the least. If another good crop should be secured again this year, certainly the marketing prospect is none too alluring.

In an interesting letter just to hand from T. H. Shield, Managing Director of the Ontario Honey Producers' Cooperative, he stated that the 1938 crop of honey was no doubt the largest on record for Canada. It is estimated to have been at least 34,000,000 pounds. But even with our sparse population of but 11,000,000 that figures out but a bit over 3 pounds per capita. With an average consumption of over 100 pounds per capita of sugar every year, surely it requires no great stretch of the imagination to believe that it would be possible to use all the honey we produce right here in Canada. Our own household uses at least 40 pounds each every year and I know many other families that use as much or more. Evidently many families use little honey, or none at all. Quoting from Mr. Shield's letter again: "The whole honey situation seems to be getting out of control, and I certainly hope that before long beekeepers will wake up to the fact that something will have to be done before prices sink to such a level where many will have to go out of business." I feel sure that we will all agree with this statement even if we do not know how to go about to remedy the situation.

Miscellaneous: At this date results of wintering are pretty well known and it can be said that wherever stores were abundant bees have wintered well. We

have seven apiaries that wintered about 100% while at other yards we had some losses because of heavy consumption of stores. This was particularly true in Victoria County where we had quite a heavy loss. This seems to be general in that section this year for reasons hard to understand. Two colonies in particular at one yard caused us to do a lot of thinking. They were very strong in bees following a heavy yield of both clover and buckwheat honey and we aimed to see that they were abundantly supplied with winter stores. They were in ten-frame L. hives each with standard shallow food chambers that were jammed with honey. Each colony was fed, in addition, 45 pounds of syrup. On April 24, when we visited the apiary one colony was completely starved and the other one was almost in the same condition. The only explanation I can give is that they must have carried on a lot of brood rearing during the mild December of '38 and consumed stores heavily. On the other hand, those small hives in Wentworth County referred too in the May issue of Gleanings, were in perfect condition late in April, requiring no feeding. These hives you may recall are actually a few inches smaller than the standard L. hive but they were made solid with stores last November. Comment is not necessary as to why they are not short of stores.—J. L. Byer, Markham, Ontario.

American Honey Institute News Notes

The April 17 issue of "Food Field Reporter" carried an article copied from Institute Inklings entitled "Introducing". In response to that article some of the largest honey buyers in the United States have written to the Institute requesting copies of Inklings that contain the names of producers who have honey to sell. If you desire to have your name on the list, inform the American Honey Institute as to the amount and kind of honey and how it is packed.

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The United States Army Air Corps maintains one of the finest training schools in the world at Texas. It has been said that approximately four-fifths of the applicants are rejected because of the lack of physical fitness. The young men who are accepted help to keep up the high health standard by means of an adequate diet. A sample breakfast menu includes fruit or tomato juice, cereal, bacon and eggs, toast and butter, jelly and **Honey,** milk and coffee. Why not keep up our health standards with a breakfast that includes honey in its menu?

• • •

After a visit to one of Madison's most up-to-date bakeries where honey is used to help make better bread and rolls, thirty enthusiastic Home Economics students and their instructor visited the offices of the American Honey Institute on May eleventh. At the Institute the young women heard a talk on "Honey in the Daily Menu".

Sweeten the boiling water in which you cook your favorite cereal with honey and you need no sugar. It is different. It is delectable.

• • •

Did you see the full-page advertisement and recipe for a Honey Apricot Pie in the May issue of McCall's magazine?

• • •

When you make your favorite cake, serve it with whipped cream into which honey has been folded.

• • •

Besides a mass display of honey in stores, honey should be displayed with other foods. Honey should move with every box of groceries that goes out the door. Honey should shine so brightly from the shelf that it may glide into the order of every grocery buyer.

• • •

Bread and Honey—Are the bread wagons in your locality carrying your honey on their routes or does legislation in your locality prohibit it? Has your baker a bread and honey exhibit in the grocery store? People will buy more bread when they have honey to eat on it. **Help Keep Happy, Healthful Homes with Bread, Milk and Honey.**

• • •

The Institute has been contacting Home Economics instructors and dietitians and has met with hearty cooperation. One state that is planning to include honey in its 1939-1940 program has 74 County Home Demonstration Agents.

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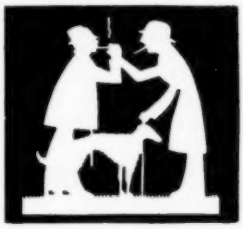
Asked and  Answered

Storing Honey in Galvanized Tank

Question.—Is there any danger of poisoning in storing or heating honey in a galvanized steel tank?—Thomas Richardson, New York.

Answer.—If a very thin layer of honey is left for a very long time in a galvanized receptacle, the zinc in the galvanizing will be turned dark, indicating a slight action between the honey and the zinc. However, zinc salts are seldom poisonous and even in such an extreme case as this is it is doubtful if the honey would be harmed. At the same time, we advise against leaving honey in this way for an indefinite long period in galvanized receptacles. For a short time or, in fact, for any reasonable time, there is no appreciable action and nothing really, then, to worry about.

Drawn Combs, Propolis, Etc.

Question.—What is meant by drawn and undrawn combs? Just what is and what is the use of pollen? Is propolis wax?—J. D. Trimmer, Pa.

Answer.—A drawn comb is a comb with the cells built out by the bees. A comb that is not drawn out is simply a full sheet of foundation in the frame that the bees have not begun to work on. Pollen is collected by the bees from certain plants and is used for brood rearing, that is, it is fed to the larvae after being mixed with nectar. The pollen contains protein which is very necessary for young bees or brood that is developing. Propolis is a resinous gummy substance gathered by the bees from certain trees and shrubs. It is very sticky and is used by the bees for chinking small openings in the hive. When you handle frames at the time you examine colonies of bees, you are likely to get propolis, a yellowish colored substance, on your hands. It is difficult to remove this propolis from one's hands.

Handling of Food Chamber

Question.—Will you tell me whether or not the queen excluder should be placed between the brood chamber and food chamber or on top of the food chamber?—Osmond L. Barringer, North Carolina.

Answer.—It is usually customary to let each queen occupy the brood chamber and the food chamber throughout the season. Some beekeepers put the queen down into the brood chamber, below the food chamber at the beginning of the main honey flow in order to make sure that the food chamber is filled at the close of the season. In localities where there is no fall honey flow of any consequence, this is a good method to follow. However, in regions where there is a heavy fall flow the upper brood chamber or food chamber is likely to be well filled at the close of the season when the queen excluder is placed above the double brood chamber. During the spring and early summer months, it is well to let each queen occupy the double brood chamber in order to insure having very populous colonies ready for the main honey flow.

Dead Drones at Hive Entrance

Question.—What makes drones die and also crowd out around the hive? The colony is strong.—A. O. Lowrimore, Ky.

Answer.—It is possible that your colony is running low on honey. One of the first signs of a shortage of stores is the presence of dead drones and drone larvae at the entrances of hives. We suggest that you check into the condition of your colonies in order to be absolutely sure that they have plenty of honey. It is common to find dead drones at hive entrances late in the season but not so common early in the season unless there is a considerable dearth of nectar.

What to Do with Fermented Honey

Question.—I have about five 60-lb. cans of fermented honey. What can I do to make it suitable for selling?—H. C. Rossman, New York.

Answer.—In order to stop fermentation, the honey in 60-lb. cans should be heated in a tank of water. The cans of honey should rest on sticks in order to prevent the bottoms of the cans from coming in contact with the bottom of the tank. A wash boiler may be used to advantage if you do not have a tank available. The water should be heated until the honey is brought to a temperature of 160° F. for about 15 or 20 minutes. The heating of the honey drives off the excess moisture from the honey and destroys yeasts that may be in the honey. The honey will then be suitable for human consumption and will not ferment. This process is quite simple. It is likely that your honey fermented because it was taken off the hives before the bees had it thoroughly ripened. This heating of the honey does what the bees did not have a chance to do. It is possible, of course, that the fermentation is due to yeasts in the honey, and if this is the fact, the heating will destroy the yeasts.

How to Tell if Colony is Queenless

Question.—I have a colony of bees that appears to be queenless although I am not sure about it. I can't find the queen, neither can I see any eggs or brood. The bees seem contented and act as though they have a

queen. How can I tell for sure if they have a queen?—J. L. Paul, Nev.

Answer.—It is a little difficult at times to know whether a colony is queenless. Sometimes a colony may have a young queen that has been mated and has not started to lay. It usually takes about five days from the time a virgin queen emerges from her cell until she mates and then another five days until she begins to lay, making ten days in all. A young queen is usually hard to find. One way to find out if a colony is queenless is to take from a queen-right colony a comb of eggs and larvae to put in the queenless colony. If queen cells are started on the comb given the colony is queenless and if no queen cells are started the colony is likely to have either a laying queen or a virgin queen.

Queen Excluders Not Needed for Comb Honey

Question.—Is it necessary to use queen excluders when producing comb honey, especially when reducing to one-story of brood?—Norbert Dirig, Indiana.

Answer.—It is unnecessary to use queen excluders in the production of comb honey. It is advisable, however, to use sections containing full sheets of foundation in order for the bees to build worker cells, instead of drone cells. If drone cells are built, queens may go up into the supers to lay eggs in the sections.

Collecting Bee Stings for Rheumatism

Question.—A doctor in Philadelphia wants bee stings in alcohol to experiment on rheumatism cases. Through a friend of mine the offer was passed on to me to furnish them. I am somewhat puzzled as to just how to get the stings. Can you give me a line on it?—Lorenzo Schlabach, Delaware.

Answer.—The only way to obtain the stings is to pick up a bee, crush it with a pair of forceps, and with another pair remove the sting, but the moment that you remove the sting from a bee, drop it in a bottle of cyanide. You will find that after you have removed about 500 stings you will inhale the vapor or aroma of the poison to the extent that you will begin to itch all over your body. You can remove a hundred or possibly two hundred stings at one time. We furnished stings in lots of five and ten thousand, but the men who did the work had to give it up, because of the bad effects when the poison entered the lungs.

Correct Summer Temperature for Storing Honey

Question.—At what temperature should extracted honey, granulated, or liquefied, be kept during the summer?—Earl B. Kolb, Pa.

Answer.— Honey in cans, in order to be held over during the summer months, should be stored in a cool place, preferably a basement that is reasonably dry. If the temperature can be kept below 60 degrees Fahrenheit, all the better. If the temperature runs up to summer heat, honey may start to ferment, especially if there are yeasts in the honey that cause fermentation. Carefully conducted scientific experiments along this line have shown that the best temperature for keeping honey, either liquid or granulated, is slightly below 57 degrees Fahrenheit. If, in the future, large quantities of honey are carried over during the summer refrigeration may be necessary.

Sweetness of Honey and Sugar

Question.—How much sweeter is honey then granulated sugar?—Frank Fekel, New Jersey.

Answer.—Authorities differ somewhat as to the relative sweetness of honey and granulated sugar. Dr. Browne of the United States Bureau of Chemistry and Soils, places granulated sugar at 100 and honey all the way from 112½ to 122½. Professor H. A. Schuette, of the Department of Chemistry, University of Wisconsin, gives us the following set of figures: Levulose, 173; Invert Sugar, 123; Sucrose, 100 and Glucose, 74. Ordinary invert sugar syrup contains considerable more water than honey. Honey is an invert sugar, therefore its sweetness is 123 with granulated sugar at 100. But as ordinary invert sugar has about 25% water and honey about 17%, it can readily be seen that the ratio would be about 123 to perhaps 130, depending upon the water content.

Dr. Beck's Book "Honey and Health"

Question.—What is the price of Dr. Beck's book, "Honey and Health", as mentioned by Mr. Earl C. Reed in April Gleanings? I have quite a retail business in honey and am anxious to obtain this treatise and also any additional information that I can use to further local sales of honey.—W. F. Gray, Ontario.

Answer.—Dr. Bodog F. Beck's book entitled "Honey and Health" is priced at $3.00 and can be obtained from Robert M. McBride & Company, New York City.

The Life of Good Combs

Question.—When new combs are put in a brood chamber how many years should the combs stay in before they are cut out and replaced with new combs?—Wm. Graber, Florida.

Answer.—Brood combs should be left in the hive as long as they remain good combs. When a comb is accidentally broken it should be removed and a sheet of comb foundation put in the frame in its place, as when such a comb is patched up by the bees they usually build considerable drone comb. In looking over your bees occasionally it would be well to take notice of the combs, and when one is noticed which has quite a number of drone-sized cells it should be replaced. Sometimes the combs become stretched, thus enlarging several rows of cells near the top-bar. Such combs should also be removed. Sometimes combs have been in service for twenty years and longer and are still good combs.

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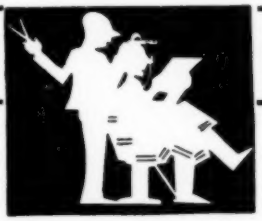
Just  News

Clark James Fulton, age 53, of Arkansas City, Ark., an engineer also a beekeeper and president of the Arkansas Valley Beekeepers' Association, was accidentally killed under the wheels of his engine on April 26.

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Jenner E. Morse of Saginaw, Mich., an attorney, also a beekeeper known to many Michigan beekeepers, passed on April 28 at the age of 79.

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President M. S. Fortune and Dr. Clay Lyle, members of the program committee, have notified me that the date for our Southern Beekeeping States Federation meeting at Vicksburg, Miss., is October 30-31. The Mississippi State Association and the Delta Beekeeping Association will act as hosts. The program committee have not promised that "We can see angels flying around", as Ned Prevost did last year at Charleston, but they have promised that this will be an old-time beekeepers' meeting, where friends get together and all have a good time. They have an interesting and entertaining program planned for us. Vicksburg has many points of historical interest and many will see the great Mississippi River for the first time. Make your plans now to attend.—A. V. Dowling, Secretary.

• • •

W. A. Chrysler, Chatham, Ontario, head of the bee supply firm bearing his name, passed away March 27, a few hours following the death of his wife. Mr. Chrysler was for many years active and influencial in our industry, being a manufacturer of bee supplies, also a former director of the Ontario Honey Producers' Cooperative. His son Ernest, a partner in the firm, will carry on.

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The fourth annual Tri-County Field Meet will be held in Delphos, Ohio, at Leininger's bee yard, near Walnut Grove, two miles east of Delphos on old State Route 30 South, Sunday, June 18. A cordial invitation is extended to beekeepers in Indiana and Michigan as well as Ohio.

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The Maryland beekeepers have succeeded in obtaining funds from the State Legislature for F. B. inspection. Three thousand dollars was requested but was reduced until it came out at two thousand dollars. We are thankful for this amount as it will provide apiary inspection that we have not had before. George J. Abrams, Specialist in Apiculture under the direction of Dr. E. N. Cory, State Entomologist, is planning an inspection service to begin October 1, when the new funds will be available.

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The Central States Beekeepers' Associations will be guests of the Iowa Beekeepers' Association at Sioux City, Iowa, on July 10 and 11. The local association cooperating with the Sioux Honey Company will serve as hosts for this meeting.

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At the request of the new Commissioner of Agriculture of Michigan, Mr. Elmer A. Beamer, the position of Chief Apiary Inspector has been removed from the Civil Servic classified list. Mr. Don P. Barrett is succeeding Vester E. Mock in this position.

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To Switzerland has fallen the honor of organizing the XIIth International Apicultural Congress and Meeting of the Apis Club, 1939. The three Swiss National Beekeepers' Associations: Verein Deutschschweizerischer Bienenfreunde, Société Romande d'Apiculture, Società Ticinese di Apicoltura extend a hearty invitation to beekeepers of all lands to participate in the Congress.

Provisional Pragram

Sunday, 6th August, evening:
Welcome to the participants.

Monday, 7th August:
Communications on the Natural History of the Bee and the Colony.

Tuesday, 8th August:
Communications on Queen-rearing and Race-breeding.

Wednesday, 9th August:
Communications on Honey.

It is proposed to have, each day, an introductory principal paper. Other communications should not occupy longer than 15 minutes, in order that there may be time for discussion.

In the afternoons, there will be visits to the Swiss National Exhibition (with its Apicultural Section), and to an apiary, also an excursion on Lake Zuerich.

Wednesday, 9th August, evening:
Official close of the Congress.

In addition, there will be excursions according to special program.

For participants who are especially interested in Bee Diseases, the following is proposed:

Thursday, 10th August:
Travel from Zuerich via Lucerne-Bruenig-Interlaken to Berne.

Friday and Saturday, 11th-12th August:
Discussions on Diseases of Bees in the Bee Section of the Agricultural Research Institute, Liebefeld. Demonstrations of methods of work.

Heads of Grain from Different Fields

Queen OK Without Wings

During March of last year, while clipping off about three-quarters of both wings on one side of a queen, I fumbled her in such a manner that the wings on the other side broke off where they joined the thorax, giving the queen much the appearance of a large yellow ant. She was not superseded, but would always try to hide when being searched for on all later visits. I requeened this colony in the month of September, as some of her bees looked like hybrids, and not of very gentle disposition. The loss of wings had not retarded the queen's egg production.—B. P. Sieber, Belle Ellen, Ala.

[It is customary when clipping a queen to clip about one-half of the longest wing on one side. It is a fact that some queens with wings clipped close up to the thorax appear to continue laying normally but we would say this is the exception rather than the rule.—Editor.]

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A Comfortable Seat

It seems that while working with the bees, most beekeepers use the top of the nearest hive as a seat; or upending the lid of the hive, upon which they are working, use it for a perch. Neither seat is very comfortable for prolonged use and if the day is a hot one, these perches are hot as well as uncomfortably hard. The writer has found that a sponge rubber kneeling pad makes a most comfortable cushion when placed on the hive lid. These pads may be obtained at most dime stores and at hardware stores. Such a pad is easy to handle and compact, taking up little room in the car or truck. Or, if desired, it may be left right in the apiary, so it is always at hand; simply store it between the inner cover and the hive lid.—Benj. Nielsen, Aurora, Nebr.

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H— Health
O— Opulence
N— Nutrition
E— Energy
Y— Youth —H. M. G.

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Landing Place for Bees

For the bee man who does not use hive stands a piece of cheap rubberoid roofing 4½-inches x 14-inches made fast to the bottom-board of a 10-frame hive with four thumb tacks allowing a 4-inch extension or hangover will provide a good landing for the bees coming in, and will save the life of a lot of old veterans. For larger or smaller hives the length should be changed to the inside width of the bottom-board, but 4½-inches is a good width.—C. H. Pirkey, Charlottesville, Virginia.

[A wider landing place would, in our opinion, be preferable.—Editor.]

Sponge rubber pad available at most dime stores and at hardware stores.

Sponge rubber kneeling pad makes a comfortable seat when placed on hive lid.

Talks to Beginners

M. J. Deyell

It Is Live and Learn

In recent talks I have tried to stress the three beekeeping fundamentals or requirements — **ample stores, comb space** and **protection.** Now to show you that I sometimes fail to practice what I preach I'll have to let you in on an experience I had this spring in losing some perfectly good colonies of bees simply because I didn't leave them enough to eat last fall, which violated the first fundamental.

It happened this way: We operated a number of colonies for comb honey last season. Those of you who have produced comb honey know that such colonies usually have more honey in the brood chambers in the fall than colonies run for extracted honey. I had not reserved a food chamber for each comb honey colony so I tried to put in full combs of honey in place of partly filled combs late in the fall to make up the deficiency in stores. This spring I found that a number of these single-story colonies had starved during the winter and early spring. I hope my lesson has been learned. In the future I'll reserve a food chamber for each comb honey colony as I do for each extracted honey colony. It is a grand feeling to know that all colonies are well supplied with stores during the spring months. A fellow can then sleep sounder nights.

Differences in Seasons

It seems that there are no two seasons alike. If all seasons were alike we could easily plan our beekeeping programs. As it is we must be ready for any emergency. If we keep in mind the three fundamentals we can the more easily meet all emergencies. And after all, how simple the fundamentals or principles are. Bees must have **ample stores**—honey and pollen—during winter, also to tide them over a bad spell of weather in the spring when they cannot leave the hives to gather nectar and pollen. Bees must have **comb space,** which means supers, in readiness for unexpected flows of honey during the active season. Supers put on in ample time will prevent congestion within the hives and this in turn will control swarming.

Keeping Ahead of the Bees

I may have already told you about the beekeeper who inquired at the close of a good honey flow if it would soon be time to put on supers. This fellow knew nothing about planning ahead intelligently and consequently got no surplus honey. We must plan to keep a few steps ahead of the bees in order to secure the maximum crop.

For example, it does no harm to put on the first supers a little early, rather than too late, especially when colonies are populous and settled warm weather has come. Those who are operating outapiaries should see to it that supers are supplied in ample time, before the first heavy flow of nectar begins.

June—Swarming Time

Unsuccessful attempts have been made to develop strains of bees that will not swarm. Excessive swarming propensities may perhaps be bred out of bees but swarming is a natural tendency which may be controlled but not absolutely prevented. Swarming is one of the means bees use in reproducing their kind. One way to reduce swarming is to put on supers in plenty of time, also to replace old worn out queens with young laying queens. If swarms should issue you are referred to the previous talk, page 317 of the May issue, for manipulation of colonies that swarm.

Swarming Experience in Michigan

I'll never forget an experience I had about twenty years ago in the wild raspberry region of northern Michigan. I was operating over 200 colonies. I was short of supers, the flow came on with a bang and there were swarms galore. One forenoon six swarms issued within fifteen minutes. I had all queens clipped. When a swarm came out I would catch the clipped queen in front of the hive, put her in a cage and thrust this cage into the entrance of the hive from which the queen came. In due time the swarm that was in the air would return to the hive. In like manner I caged other clipped queens that came out with swarms. After all swarms returned to

their respective hives I examined the brood chambers carefully, destroyed all but one capped queen cell in each colony and hung each caged queen in the top super between two extracting combs, or in case of comb honey colonies, beside the follower board of a comb honey super. In due time, about twelve or fourteen days, these colonies would have young laying queens. The old queens caged safe in the supers were fed by the bees through the wire screens and in some cases were kept alive for six weeks. These old queens were usually disposed of after young queens started to lay below. This little trick in handling swarms was passed on to me by one of the most successful comb honey producers in Michigan. The main advantage is that the working force of a colony that swarms is kept together and not divided, as is the case when the old or parent hive is set aside on a new stand a few feet away and the swarm hived on the old stand.

Supering for Extracted Honey

There are two methods of supering. One is bottom supering which means that the first super is put on the brood chamber, usually over a queen excluder. We think it pays to use queen excluders for extracted honey. When the first super is partly filled another super is given underneath the super already on the colony. When a third super is needed it is given underneath the two supers already on, and so on, until the required amount of supers are given. This method necessitates lifting off and on filled and partly filled supers and requires considerable labor, especially if the piles of supers are high.

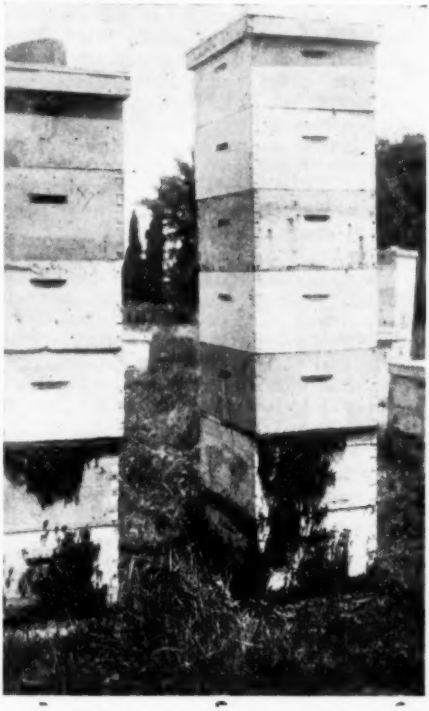
Top Supering Easier

During the past six years we have been practicing top supering for extracted honey. It is very simple. In fact, it is so simple that there isn't much to it. The first super is placed over the brood chamber on the queen excluder. When a second super is needed it is placed on top of the first super given. The third super is placed on top of the second, and so on.

Last summer we had many colonies with six, seven, and some with eight deep supers. Just think of lifting off six or seven filled and partly filled supers to put a fresh super at the bottom of the pile, then lifting these supers back on again. Those who are fond of work may do this if they wish, but I'll never do it. Life is too short.

It is a simple matter to take a peek into the top super to determine whether another super is needed. This doesn't stir up the bees as much as lifting all of the supers off and on each time a fresh super is needed.

We have discovered another advantage of top supering—the combs are well filled, instead of being partly filled and less labor is required in extracting because fewer combs are handled. Furthermore, we are quite sure that honey produced by the top-supering method is cured better than it is by the bottom supering method, because the honey is not scattered through so many combs and bees have a better chance to ripen it.



Taken during 1938 showing two big colonies with supers placed over double brood chambers. The temperature was above 90° which accounts for bees clustering in front.

The important thing in top supering is to get supers on in plenty of time.

Supering for Comb Honey

During the season of 1938 we tried top supering with 75 colonies run for comb honey and found this method satisfactory. It is necessary to get finished sections off the hives before combs become travel-stained. Top supering for comb honey may not lessen the labor to any great extent, because the bottom super containing finished sections has to be removed when filled and capped and this

(Continued on page 392)

XUM

The West Invites You

Marie Whitcombe, Davis, California

The National Beekeepers' Convention to be held in Sacramento, California, from November 7 to 10, is a genuine opportunity for beemen all over the country to escape for a time at least from the many tasks that confront men and women in the industry. As yet details of the program for the conclave have not been worked out, but as speakers are drafted and demonstrations announced, we will tell you of them within the pages of this magazine.

The beemen of California are looking forward to meeting their friends and associates from other states, hoping to pick up new ideas and perhaps in some small way add to the knowledge of the visitors. This 1939 Convention should be very important. Many states at the present time have fine state groups doing excellent work in their own territory, but it is becoming increasingly important to strengthen the National Honey Producers' League so that its effects can be felt throughout the whole nation.

Until the details of the program can be printed, we shall bring you some of the highlights of the scenic West, and data on places you will surely want to see when you get as far west as Sacramento. First of all, the site chosen for the meetings, is the capitol of the State. Sacramento is the largest inland city in the state, it boasts of fine gardened homes, select eating places, many comfortable, reasonable hotels, a 40-acre park surrounding the capitol buildings in the downtown section, the elaborate Crocker Art Gallery, and the historically important Sutter's Fort.

Being only 80 miles from San Francisco, you will surely want to visit the International Exposition on Treasure Island. Down from Sacramento, through Vallejo (the site of the Mare Island Navy Yard), thence across Carquinez Bridge, the San Francisco Bay Bridge, and finally to the entrance of the Fair, is the shortest route, although you will encounter two toll bridges en route.

There's much to see in San Francisco, too. Some of the highlights are the new Opera House at the Civic Center, the De Young Memorial Museum, the Palace of Fine Arts on the site of the 1915 exposition, Fleishacker Zoo and swimming pool at the beach, Coit Memorial Tower on top of one of the many down town hills from which you will get a full view of the Fair, the Golden Gate and the city itself, and last but not least, Golden Gate Park and the many beauties it possesses. If you are really interested in seeing San Francisco like you've never seen it before, beg, borrow or buy a copy of "San Francisco—West Coast Metropolis," a new book just completed and written by Edwin and Louise Rosskam. It contains a number of interesting photographs depicting the glamor that belongs to San Francisco.

If you like to eat—and who doesn't—visit Fisherman's Wharf, at the north end of the Embarcadero (the street that runs along the waterfront) and treat yourself to an all-fish dinner. And catch a breath of the salty sea breeze that is wafted in by the scores of small fishing boats that tie up at this wharf.

While you visit this bustling city, try to remember that the first bees ever to come West were landed in San Francisco. As far as can be ascertained from historical records, California was beeless until sometime after John Sutter, casually wandering among the river beds of the great Sacramento Valley, picked up a glittering bit of ore and heard it proclaimed gold. That was in 1849—just 90 years ago. From that date forward, history is replete with tales of pioneer beekeepers slowly but increasingly moving to California. Some of them brought their hives across the desolate prairies in flimsy wooden wagons. Such a pioneer beekeeper was J. Gridley, originally of Michigan. He started his journey with four colonies. Each afternoon he made camp sufficiently early to unload them and turn them loose for a few hours, and at the rise of the sun he was once again on his long, tedious journey.

Thomas Shelton, another pioneer who foresaw the demand for honey in California long before a hive had been set upon its shores, took his enterprise West by way of boat from New York. His original load included 12 hives; sad to relate, 11 of them died in transit. The one that re-

(Continued on page 389)

Buy and Sell Here

CLASSIFIED ADS

Only responsible advertisers and honest advertisements will be admitted to these columns. References required from new advertisers not known to us. Rate—7 cents per counted word each insertion. Each initial, each word in names and addresses, the shortest word such as "a" and the longest word possible for the advertiser to use, as well as any number (regardless of how many figures in it), count as one word. Copy should be in the 15th of month preceding.

HONEY FOR SALE

WHITE clover and light amber. Lewis Klaty, Carsonville, Mich.

FANCY clover honey, case or quantity. J. Stahlman, Grover Hill, Ohio.

FOR SALE—Extracted and comb honey. M. W. Cousineau, Moorhead, Minn.

HONEY—Light and light amber extracted. F. W. Lesser, Fayetteville, N. Y.

CHOICE MICHIGAN clover honey in new 60's. David Running, Filion, Mich.

REDUCED prices on comb and extracted. Write H. G. Quirin, Bellevue, Ohio.

LIGHT HONEY in 60's. Also light or amber in pails. J. L. Faulk, Byron, Mich.

CHOICE clover honey in 60's. R. C. Bish, successor to Moore Apiaries, Tiffin, O.

SUPERB clover honey, extracted. Priced to sell. C. J. Baldridge, Romulus, N. Y.

FINEST CLOVER extracted honey, two 60's; $7.20. Irvin Van Devier, Medina, O.

CHOICE clover honey, new 60's case, $6.60. Sample 10c. Owosso Dairy, Owosso, Mich.

CLOVER comb and extracted. Quotations on request. Howard Grimble, Holcomb, N. Y.

FINEST QUALITY white clover honey. New 60's. Orval Dilley, Grand Ledge, Michigan.

CHOICE CLOVER and light amber honey in 60's. The Hubbard Apiaries, Onsted, Mich.

MICHIGAN'S finest well-ripened white honey in new 60's. Jay Cowing, Jenison, Mich.

FOR SALE—Fancy Iowa white clover extracted honey. Kalona Honey Co., Kalona, Iowa.

COMB honey, any way you want it. Will quote you price. F. B. Sherman, Edgerton, Wis.

ORANGE, palmetto and mangrove honey in new sixties. Peter W. Sowinski, Fort Pierce, Florida.

CHOICE white clover and light amber extracted honey in new 60's. Noah Bordner, Holgate, Ohio.

WHITE clover and buckwheat honey in 60's. Finest quality. A. B. McHenry & Son, Stillwater, Pa.

CHOICE WHITE clover honey in 60, 10 and 5 lb. tins. Sample free. Harry T. Gable, Romulus, N. Y.

NEW CROP CLOVER extracted. Let me know the quantity you can use. Emery Horton, Holcomb, N. Y.

JEFFERSON COUNTY clover honey. Any size package. Ralph Hibbard, 131 Benedict St., Watertown, N. Y.

WE BUY AND SELL ALL KINDS COMB and extracted, carloads and less; also beeswax. H. Blitz, P. O. Box 3452, Philadelphia, Pa.

RASPBERRY AND CLOVER HONEY. In 60-lb. cans for 8c a lb. Elmer Hutchinson & Son, Lake City, Mich.

FANCY TUPELO and light amber honey for sale, barrels and 60's. Marks Tupelo Honey Co., Apalachicola, Fla.

ASK FOR our new lower prices on our best Michigan clover honey. E. D. Townsend & Sons, Northstar, Michigan.

CCMB and extracted honey. Best quality white, also amber. Write for prices. H. E. Crowther, Cass City, Mich.

FINEST QUALITY white clover honey, $7.20 per case, 120 lbs. Sample 10c. Arthur Thayer & Sons, Freeland, Mich.

HONEY FOR SALE—All kinds, any quantity. H & S Honey & Wax Co., Inc., 265-267 Greenwich St., New York, N. Y.

CHOICE white clover and light amber extracted honey in new 60's, by case or ton lots. R. J. Williams, Attica, Ohio.

FANCY white clover extracted honey, can or carload. Price on request. Sample, 15c. Jos. H. Hoehn & Sons, Ottoville, Ohio.

WHAT am I offered for 200 cans (new 60's) of light clover honey? Sample 10 cents. The Jones Apiaries, Sauquoit, N. Y.

CHOICE well-ripened Michigan clover extracted honey in 60's. About three tons left, 6c. E. W. Redman, Ithaca, Michigan.

Well-ripened clover, buckwheat and fall amber honey in 60', 5 and 2½ lb. tins. Earl Rulison, Route 1, Amsterdam, N. Y.

COMPLETE line comb and bottled honey, pure clover. Also packed in 5's and 60's. Central Ohio Apiaries, Inc., Millersport, Ohio.

CHOICE white sweet clover, also extra light amber honey in new 60-pound tins by the case or carload. Dadant & Sons, Hamilton, Illinois.

CLOVER HONEY FROM CLOVERDALE. Ohio's finest clover extracted in 60's. Sample, 10c. Prices upon request. The Cloverdale Apiaries, Cloverdale, Ohio.

HONEY PACKERS—Write us for prices on carload lots of California and western honeys. We stock all varieties. Hamilton & Co., 1360 Produce St., Los Angeles, California.

HOWDY'S HONEY—Fine quality white clover, also buckwheat and light amber mixed extracted in new sixties. White Clover Honey Hunks. Howard Potter, Ithaca, Michigan.

COMB HONEY—Fancy white clover, $2.75 case; Fancy mixed, or amber, or buckwheat, $2. White clover, extracted, 6½c; Buckwheat, 5c; Amber, 5½c. C. B. Howard, Geneva, N. Y.

NEW YORK State comb and extracted honey, buckwheat and clover, any quantity, all size packages. Five-pound pails my specialty. Edward T. Cary, Midland Ave. and Tallman St., Syracuse, N. Y.

XUM

Cash Paid

For extracted honey; cars and less than cars. Mail samples and best price delivered Oconomowoc.

C. W. AEPPLER COMPANY
Oconomowoc, Wisconsin

Queens Queens

GOOCH'S Three-band leather-colored Italians. All queens mated from strong standard 3-frame nuclei large size. Any number, 40 cents each.

Gooch Apiaries

Farmersville Texas

Queens 35c; 3 for $1.00

By Return Mail

Bright 3-Band Italian Bees and Queens of highest quality. Purely mated, safe arrival and satisfaction guaranteed. Packages express collect. Health certificate furnished with each shipment.

2-lb. pkg. with queen, ...$1.50
3-lb. pkg. with queen, ... 2.00

JOHN A. NORMAN
Rt. 2, Box 38. LaPine, Ala.

Italian Package Bees and Queens

Established 1883

Untested queens, ...$0.75
2-lb. pkg. and queen, ... 2.45
3-lb. pkg. and queen, ... 3.15

Less 15% to dealers.

Victor Apiaries, Goodrich, Tex.

Gaspard's

Package bees and queens at June prices.

Write for full particulars.

Address J. L. Gaspard, Hessmer, La.

Queens, 40c ea.

J. F. McVAY Jackson, Ala.

HILTNER'S quality white clover honey is really a fine honey, produced in modern apiaries, extracted with finest equipment, packed in new cans. Prices on request. Ray Hiltner, North Creek, Ohio.

HONEY AND WAX WANTED

BEEKEEPERS TAKE NOTE—We will not guarantee any honey buyer's financial responsibility and advise all beekeepers to sell for cash only, or on C. O. D. terms except when the buyer has thoroughly established his credit with the seller.

WANTED—White clover honey. New cans only. Clover Blossom Honey Co., 712 Kossuth St., Columbus, O.

HIGHEST cash price for your wax. Write for price and shipping tags. Walter T. Kelley Co., Paducah, Ky.

WANTED—Comb, chunk comb, white and light amber extracted honey. Any amount. Central Ohio Apiaries, Millersport, Ohio.

WANTED—Carlots of honey, state quantity, shipping point and price. Mail sample. Bryant & Cookinham, Inc., Los Angeles, Calif.

CASH PAID FOR carloads and less than carloads of extracted honey. Send sample and best price. C. W. Aeppler Company, Oconomowoc, Wis.

WANTED—White and amber extracted Honey, any quantity, also Beeswax. Write The Fred W. Muth Co., Pearl & Walnut Sts., Cincinnati, Ohio.

WANTED—All grades of comb and extracted honey. Bee supplies and honey containers for sale. Prairie View Apiaries, 12213 12th St., Detroit, Michigan.

FOR SALE

500 bright clean 60's, used once, 19c each. D. Alexander, Box 343, Route 4, Toledo, Ohio.

YOUR WAX worked into medium brood foundation, 15c pound; thin super, 22c. 10 pounds medium brood foundation $4.00. Fred Peterson, Alden, Iowa.

ATTRACTIVE prices on bee supplies and comb-foundation. Send for catalog. Saves you money. The Fred W. Muth Co., Pearl & Walnut Sts., Cincinnati, Ohio.

WRITE FOR CATALOG. Quality bee supplies at factory store prices. Prompt shipment. Satisfaction guaranteed. The Hubbard Apiaries, Onsted, Michigan.

ECKHARDT QUEENBEE MARKER—Now available in United States and Canada. Literature upon request. Lee B. Trawatha (Sole Representative), Willoughby, Ohio.

READY WIRED FRAMES—Scientifically correct wiring results in perfect combs, reduces swarming 75%. Literature free. Sample 10c. A. E. Wolkow, Hartford, Wis.

COMB FOUNDATION at money-saving prices. Plain, wired and thin section. Wax worked at lowest rates. Comb and cappings rendered. E. S. Robinson, Mayville, N. Y.

CARTONS for Cut Comb Honey. New attractive designs with your name and address. Low prices. Fast service. Samples on request. May Carton Co., Box 257, Traverse City, Michigan.

$11.00 is our price for working 100 pounds of your wax into medium brood. Our large modern bee hive factory is manned by experienced workers, milling thousands of pounds of comb foundation, and hundreds of thousands of board feet of lumber into bee hives annually. QUALITY AT LOW COST is our motto. Free catalog. Free shipping tags for your wax. The Walter T. Kelley Co., Paducah, Kentucky.

QUEEN PAINTING OUTFITS, $2.00 postpaid. Southwick Apiaries, Waban, Massachusetts.

KING UNIVERSAL BOARD, for swarm control, two queen colonies, etc. Write O. A. King, 5918 Sewells Pt. Rd., Norfolk, Va.

FOR SALE—Fine quality queen mailing cages; Root quality bee supplies; both comb and extracted honey. Orders filled promptly. Write us or drive over M53, fifty miles north of Detroit. Hamilton Bee Supply Co., Almont, Michigan.

BEES AND QUEENS FOR SALE

ITALIAN QUEENS. W. G. Lauver, Middletown, Pa.

FORTY swarms bees for sale. Clean inspection. Arthur Howland, Basom, N. Y.

SILVER RUN QUEENS are sterling. Try them. W. E. Streetman, Midland, Ga.

WE SHIP the day you want us to. Package Bees, Choice Italian Queens. Rapides Apiaries, Winnfield, La.

FOR SALE—80 colonies bees and equipment cheap. Guaranteed disease free. E. G. Carr, Pennington, N. J.

ITALIAN THREE-BAND QUEENS at market price. Circular mailed. D. W. Howell, Shellman, Georgia.

EMPIRE State strain Italian queens. Bred for honey production. 50c each. Coggshall & Son, Groton, N. Y.

ITALIAN queens, untested, 1 to 10, 50c each; 10 or more, 40c each. James E. Wing, Knights Landing, Calif.

SELECT northern-bred Italian or Caucasian queens, 75c each. Very gentle and productive. Conner Apiaries, Stockton, N. J.

ITALIAN Queens that produce hardy and gentle bees. Untested queens, 75c each. Robert B. Spicer, Wharton, N. J.

LEATHER-colored Italian queens, 50c each. Real queens. Real service. Small discount on 25 or more. Diemer Bee Co., Liberty, Mo.

WING'S Italian Queens, extra gentle, non-swarming. Less than ten, 50c each. Ten or more, 40c each. Instant delivery. J. E. Wing, Cottonwood, Calif.

NORTHERN BRED QUEENS! Young, vigorous, leather-colored Italians. Personally reared and guaranteed to satisfy. 50c each. Try us. Greulick & Son, Scotia, N. Y.

REDUCED prices on long-tongued Caucasian bees and queens. 2-lb. package with queen, $1.65; 3-lb. package with queen, $2.00. Queens, 40c each; $35 per hundred. Safe arrival and satisfaction guaranteed. P. B. Skinner Bee Co., Greenville, Ala.

REAL PETS—Brown's Stingless Bees. Good honey gatherers, non-swarmers. Season's price, $1.00 for a queen, over 10, 90c each. Brown's Apiary, Cape May Court House, N. J.

GOLDEN queens, excellent quality, will please the honey producer. Untested, 50c; tested, $1.00. Health certificate. Satisfaction guaranteed. O. E. Brown, Rt. 1, Asheboro, N. C.

"QUEEN LOOSE PACKAGE", ITALIANS, two pounds, queen, $1.85; three pounds, queen, $2.45; EXTRA QUEENS, 45c postpaid. EPHARDT'S HONEY FARMS, LULING, LOUISIANA.

"CARNIOLANS Exclusively." Queens from imported mothers, Jan Strgar strain. Untested, 1 to 10, 60c. Quantity prices on request, Tested, $1.50. Allen's Apiaries, Auburndale, Florida.

Queens

Why take the Chance?

My carefully produced three-banded Italians will reduce your risk of a honey crop. June price, 35c each, any number. Capacity, more than 100 queens per day. Safe arrival and satisfaction guaranteed.

JOHN C. HOGG
Hahira, Georgia

BEEKEEPERS:

We now have another new "Drip-cut" number made especially for the beekeeping trade and to retail at 50c each. Write for quantity prices.

Honey Dispenser Sales Co.
Madison Wisconsin

"She-suits-me" queens, 3-banded Italians, most excellent strain: One queen, 75c; 3 queens, $2.00. Stamps accepted for single queen.

Koolairy veil, $1.50 postpaid, SAFIN queen cage, $1, for ten; 15c for one.

ALLEN LATHAM
Norwichtown, Conn.

A Good Rule to Go By

Buy your Italian bees and queens from

ALABAMA APIARIES
Mt. Pleasant, Alabama

2-lb. package with queen, ...$1.75
3-lb. package with queen, ... 2.25
Select untested queens, each ..... .50

Write us for liberal discounts.

Light 3-Banded Italians

40c QUEENS **40c**

Health Certificate Furnished

E. A. CASWELL
4019 Piety St., R.F.D. Rt. 4
New Orleans, La.

XUM

Queens, 50c

Italians of Quality
That Produce the Goods

JOHN G. MILLER
723 C St., Corpus Christi, Texas

FOR SALE!

Pure Italian Bees and Queens

Bright Yellow and Three-Band Queens,

40c each

1 lb. bees, young queen, . . $1.00
2 lbs. bees, young queen, . . 1.50
3 lbs. bees, young queen, . . 2.00

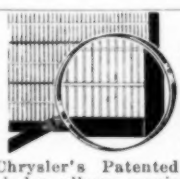
15% discount to dealers and large order. We guarantee bees and prices. Write us what you want and we will satisfy you.

Graydon Brothers, Greenville, Ala.
Route 2

LOOK

Three-banded Italian bees and queens that are real honey gatherers and very gentle to work with. They work fine in cool damp weather. Health certificate with each shipment. Satisfaction Guaranteed.

ALAMANCE BEE COMPANY
Geo. Elmo Curtis, Mgr.
Graham, N. C.



A New and Better QUEEN EXCLUDER

Chrysler's Patented All-Steel Queen Excluder allows maximum bee passage; better ventilation; more honey production. All metal—no wood; no sharp edges to injure bees. Solid, durable, electrically welded throughout. Rust-resisting galvanized steel. Easy to remove; will last for years.

Write for Circular A-2.

W. A. CHRYSLER & SON
3408 Woodward Avenue, DETROIT, MICH.

THE BEE WORLD—The leading journal in Great Britain, and the only international bee review in existence. Specializes in the world's news in both science and practice of apiculture. Specimen copy, post free, 12 cents stamps. Membership in the Club, including subscription to the paper, 10/6. The Apis Club, L. Illingsworth. The Way's End, Foxton, Royston, Herts, England.

CAUCASIANS. MILLER BROTHERS, Three Rivers, Texas. Oldest exclusive Caucasian breeders west of the Mississippi. Packages with queens introduced. Write for Circulars.

CAUCASIAN bees and queens, after June 1st, 2-lb. pkg., $1.65 each; 3-lb. pkg., $2.00 each. Untested queens, one, 50c; 10, $4.50; 25, $10.00. Safe arrival. Lewis & Tillery Bee Co., R. 4, Box 132, Greenville, Ala.

EARLY PACKAGE BEES—Prompt shipment begins May 1. Two-pound package bees with queen, $2.45; 3-lbs., $3.15. Add 25c postage for each package. Choice Italian queen, 75c. Safe arrival guaranteed. Birdie M. Hartle, Reynoldsville, Pa., Box 363.

EXTRA YELLOW Italian queens that produce bees a little more yellow than three-banded; more gentle and just as good workers. Untested 50c each; tested $1.00 each. Health certificate and satisfaction. Hazel V. Bonkemeyer, Randleman, N. C., Route 2.

THE NORMA ROY APIARY—Italian bees, 2 pounds with queen, combless, $2.00; 2 pounds with queen introduced, 1 comb brood, $2.20. Additional pounds bees, 50c; additional comb brood, 40c. Health certificate with shipment. Norma E. Roy, Hessmer, Louisiana.

BEGINNER'S BEST BET, high quality Italian queens introduced, one standard comb, 2 pound bees $2.25; 3 pound bees, $2.85; Modified-Dadant comb, 2 pound bees, queen introduced, $2.85. Extra queens, 45c postpaid. EPHARDT'S HONEY FARMS, LULING, LOUISIANA.

CHOICE bright Italian queens that are a pleasure to work with and be proud to own. The stock has been bred and selected in the North the past 35 years for good winterers, hustlers, gentleness, and fine color; 75c each; dozen, $8.00; breeders, $6.00. Emil W. Gutekunst, Colden, N. Y.

(QUEENS WITH CHARACTER)—My business almost doubled in '38—there was a reason. I supplied my customers with the best queens that could be purchased. If you haven't tried them, ask your neighbor. I can fill your early orders. Start shipping about March 10th. D. P. Green, Deland, Fla., R. 2.

PACKAGE BEES and Italian queens. N. J. Experiment Station stock. High producing, carefully reared. Bred for business. Queens, 75c each. Two-pound packages, $2.45; three-pound packages, $3.15. Used equipment at bargain prices, none shipped. Stamps taken for single queen. E. G. Carr, Pennington, N. J.

For Stronger Colonies, Bigger Honey crops and Gentler Bees try our prolific, well-bred, three-banded Italians. Used for years by leading beekeepers of the U. S. and Canada. We are sure they will please you. We send all new, clean, light and convenient shipping cages; more than full weight of healthy young bees; select young laying queens of our own production; few or no drones and no disease. 2-lb. packages with queens, June to Sept. $1.95 each; 3-lbs., $2.50 each. Express or mail shipment f.o.b. here. Select young laying queens, 50c each. These prices are fair and reasonable. We expect to send only packages and queens of the finest quality and it costs money to produce them. Therefore, we are not throwing them at you at any old price. H. C. Short, Fitzpatrick, Ala.

DAIRY GOATS

LEARN ABOUT DAIRY GOATS—monthly magazine $1 yearly; sample copy and information free. Dairy Goat Journal, Dept. 919, Fairbury, Nebr.

MISCELLANEOUS

LABELS—NEW DESIGNS. Samples free. Thoughtgift. 50 Presque, Rochester, New York.

READ MICHIGAN BEEKEEPER, Devoted to Improvement of the Honey Market. One year, 50c. Single copy, 10c. Published bi-monthly at 406 E. St. Joseph St., Lansing, Mich.

POSITION WANTED

WANTED, work. State wages with board, room. Experienced. George Benoit, Owl's Head, N. Y.

QUEENS 75c

2-lb. package with queen $2.45
3-lb. package with queen 3.15
15% to dealers.
No order too large, none too small to be appreciated.

OVERBEY APIARIES, Bunkie, La.

QUEENS QUEENS

35c each while they last.

Young bees, 60c lb.
Health certificate with each shipment.

Sunkist Bee Co., Bourg, La.

Quality Follows Quantity

In a well managed queen rearing establishment this is why we can offer you genuine Mountain Gray Caucasian Queens at the following prices—June and after: Untested 1 to 11, 50c each; 11 to 24, 45c each; 25 and over, 40c each; tested queens, $1.00 each; select tested, $1.50 each; A-1 breeding queens, $5.00 each. All queens are high quality in every respect, thoroughly gentle, easy to handle and good honey gatherers.

Bolling Bee Co., Bolling, Ala.

THE WEST INVITES YOU

(Continued on page 384)

mained was brought to San Jose, today a thriving community about 50 miles south of San Francisco over the new Bayshore Highway. This single colony threw off many swarms. Unfortunately Mr. Shelton did not reap the reward of his daring journey. Soon after his arrival he was killed in an explosion of the ill-fated steamer Jenny Lind. In December, two of the swarms from this first colony were sold at auction to James W. Patrick for over one hundred dollars each.

W. A. Buckley, who came to California in the early 50's in search of gold, included in his luggage three hives of bees. His journey took him to Panama. While crossing the Isthmus he lost one colony, another was lost on the ocean voyage, but the third reached San Francisco in good condition.

When you revel in the abundant living offered by San Francisco as it is today, try to recall that it was not always the thriving, exciting city that stretches before you. Give thought for just a moment to the pioneers who dared so that you might reap the benefits of their toils. And above all, as beekeepers, let us not forget men like Gridley, and Shelton, and Buckley, who contributed no small part in the building of the great Western Empire.

We sincerely hope that everyone of you can join us here in California and make this meeting one of the most outstanding, most profitable ever held.

New York City
12 W. 21st Street

Complete Stocks for Quick Delivery

Root QUALITY

BEE SUPPLIES

Guaranteed Satisfaction
See Your Local Dealer

Norfolk, Va.
55 Commerce St.

SPOERRI'S GOLDEN BEES

Large, gentle, and Super-Productive! Original Italian stock but improved and bred up over a long period of years. Every queen is young, powerfully productive, and PERSONALLY REARED.

2 lb. Pkgs.	$1.95
3 lb. Pkgs.	2.55
Queens, each, postpaid	.60
Queens. 5 and over, postpaid	.50

Write for Quantity Prices

Discount to Dealers and Associations,
1 to 99—15%. 100 and over—20%.

Spoerri Apiaries, St. Bernard P. O., La.

SUPERIOR BEES

We have had one of our best seasons to date. WHY? Because our customers knew that when they placed their orders with us they would get the VERY BEST in both bees and service. Full weight baby bees, selected young laying queens. Quick satisfactory service. All

SUPERIOR SERVICE

this can be had for the following low prices.

2-lb. pkgs. with queens, each	$1.60
Without queens, each	1.20
3-lb. pkgs. with queens, each	2.10
Without queens, each	1.70

Selected young laying queens, 1-9, 40c; 10 up, 35c.

N. B. Smith & Co., Calhoun, Alabama

To New York State Beekeepers:

You don't buy shoes with paper soles just because they cost less than good shoes—yet a lot of beekeepers buy an inferior grade of foundation, sections, frames and hives just because the figures following the dollar mark seem smaller.

We would rather lose an order than lose a friend. That's why we recommend and sell **ONLY ROOT QUALITY.**

Adams & Myers of Ransomville, N. Y. write:

"We have always liked three-ply foundation the best of all the foundations we have used,—and we have used large quantities of many makes. We used 500 lbs. of three-ply the first or second year it was out. The frames that were equipped with this lot were marked by driving a large-head tack in the top bar and to this day these combs, when we run across them are worker size and non-sag, clear to the top bars. I DOUBT THE WISDOM OF USING ANYTHING AS A SUBSTITUTE FOR THREE-PLY COMBS." (signed) H. M. Myers

Send your beeswax to Syracuse. We pay the highest market price. We also render old combs and cappings. Write for terms.

A. I. Root Co. of Syracuse

Midland Ave. and Tallman St.
SYRACUSE, N. Y.

SERVES YOU BEST

QUICK SHIPMENT

98% of orders shipped the same day received.

AMPLE STOCK

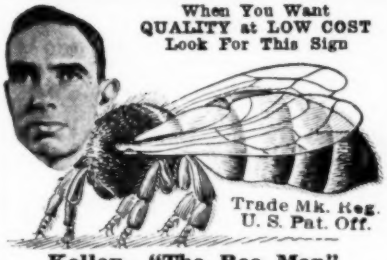
plus this shipping record makes it possible to assure you your orders will be shipped promptly

Don't lose honey for lack of equipment!

Root QUALITY
BEE SUPPLIES

The best in supplies without delay.

The A. I. Root Co. of Iowa
Council Bluffs, Iowa



Kelley—"The Bee Man"

QUEENS

35c each
3 for $1.00 postpaid

We breed the light 3-banded Italians only. For years we have been producing 100 queens daily and guarantee our queens to be purely mated and satisfactory. Prompt daily shipments from Paducah.

The Walter T. Kelley Co., Paducah, Ky.

Queens

35c each

26 or more @ .....$ .35
1 to 25 @ ..... .40

Queens from Progeny Tested Breeders. This is important to you. It makes a lot of difference.

Package Bees

THREE-BANDED Italians

2-lb. packages with queens, ...$1.75
3-lb. packages with queens, ...$2.25

Speedy reproduction is necessary for success this late in the season. Our bees are quick builders.

Garon Bee Co., Donaldsonville, La.

Moore's Strain

Leather Colored Italian Queens
Superior Stock

50c

World-wide reputation for honey-gathering, hardiness, gentleness, etc., since 1879. Safe arrival and satisfaction guaranteed.

J. P. MOORE

MORGAN KENTUCKY

NORMAN BROS.

35c **QUEENS** 3 for $1.00

BRIGHT 3-BANDED ITALIANS

SUPERIOR QUALITY — LARGE SUPPLY—FAST SERVICE.

Order now. They will be ready when you want them. Safe arrival, satisfaction guaranteed, health certificate furnished.

—PRICES—

2-lb. pkg. with queen, ...$1.40
3-lb. pkg. with queen, ... 1.75
Each additional pound bees, .35

Norman Bros. Apiaries, Ramer, Ala.

Palmetto Quality Queens

Again we solicit your orders for our high quality Queens for the season of 1939. Prices as follows: 1 to 10 queens, 40c each; 11 to 50, 37c each; more than 50, 35c each. 15% discount to dealers purchasing 100 or more queens during the season. Above prices in effect May 25. We guarantee satisfaction and a square deal.

C. G. Ellison & Sons, Belton, So. Car.

WHEN WRITING TO ADVERTISERS, MENTION GLEANINGS

WHEN WRITING TO ADVERTISERS, MENTION GLEANINGS

Package Bees and Queens

If you want the most satisfactory package you have ever bought it's our loose-queen package. They are arriving 100% safe. Will cut your loss on failing queens. 2 lb. package with loose queen, $1.60; 25 or more, 10% discount. 3 lb. package with loose queen, $2.00; 25 or more, 10% discount. Untested queens, 40c each; 25 or more, 10% discount.

TAYLOR APIARIES, Luverne, Ala.

XUM

We want to thank the many bee keepers for their splendid patronage this year.

Our prices are as follows:

2-lb. package with queen $1.75
3-lb. package with queen 2.25
Queens ..... .40

2-lb. queenless package $1.10
3-lb. queenless package 1.50

In lots of fifty or more:

2-lb. package with queen $1.50
3-lb. package with queen 2.00

We promise prompt, courteous service and guarantee satisfaction.

Sullivan Wright & Company

Gilbertown, Alabama

TALKS TO BEGINNERS

(Continued from page 383)

means lifting the supers on top to get at the bottom super. However, this method of supering does result in well filled and capped sections and a minimum of unfinished sections, and that is what counts. We hope to do some further experimenting this season.

Manipulation of Food Chamber During Honey Flow

For the benefit of some recent beginners who may not be familiar with the food chamber, it may be said that it is a deep or shallow extracting super of honey reserved for each colony—this in addition to the honey that may be in the brood chamber.

The food chamber is a permanent part of the colony equipment. When it was first used it was put on the colony in the fall to supply ample winter stores. The queen was given access to the combs of this super or food chamber as well as the brood chamber up until the beginning of the main honey flow. The queen was then put down into the brood chamber under a queen excluder and the food chamber was kept on top of the pile of supers until the surplus honey was removed and then it was placed down on

(Continued on page 396)

BETTER-BRED QUEENS Three-Banded Italians

Be prepared for the summer honey flow, and late increase by buying our well prepared packages and Better-Bred queens. We are prepared to make prompt shipment on short notice.

2-lb. packages with queens, ..$1.503-lb. packages with queens, .. 2.00
Queens, 3 for, ... 1.00

CALVERT APIARIES, CALVERT, ALABAMA

2 Years $1.50

American Bee Journal—monthly: published and edited by beekeepers for beekeepers. Full of pictures and tips on care of bees and selling of honey.

SAMPLE COPY FREE.

$1.00 a year, 2 years $1.50 in U. S. A. and Canada Combined with Gleanings in Bee Culture, both magazines, **ONE YEAR, $1.60.** This offer good only in the United States. Address—

American Bee Journal, Hamilton, Ills.

SWARMING

Continued from page 352)

has shown that for an efficient operator five minutes per colony is sufficient for finding the queen and setting up the brood.

In seeking swarm control methods we should not overlook the importance of breeding from non-swarming stock. Rearing queens from swarm cells only intensifies the swarming propensity. By the use of up-to-date methods, not only is one enabled to avoid loss of swarms but also to double the colony production and to reduce to less than one-half the amount of labor required for manipulation as compared with the usual practice.

Valparaiso, Indiana.

[In our apiaries, both in eastern and western Ohio we use the double brood chamber throughout the season and we are not troubled with the bees gnawing the bottoms of combs in the lower brood chambers, except about ⅜ inch directly above the bottom-bars in some of the combs. This occurs also in single brood chambers. Nor are we troubled with excessive swarming—that is, if we give ample comb space, or supers in plenty of time, before they are actually needed. When we fail at this point some swarms will issue. Our method of management might not work in Mr. Miller's locality.—Editor.]

Jensen's Bees and Queens

Booster packages of our baby bees (the cream of the crop), will put real life into those lagging, under-par colonies. The cost will be insignificant as compared with the results in the honey crop. Don't tolerate inferior queens, when good ones are so cheap. We challenge the world to produce better queens.

"Right Now Service" on any size order.

Quantities:	2-lb. pkgs. with Queens.		3-lb. pkgs. with Queens.		Queens: Select Untested.
		Queenless.		Queenless.	
1- 10,	$2.10	$1.60	$2.60	$2.10	$0.50
11- 50,	1.95	1.50	2.45	2.00	.45
51-100,	1.85	1.45	2.35	1.95	.40
101- up,	1.75	1.40	2.25	1.90	.35

No discounts from the above prices

Jensen's Apiary Co.
Macon, Miss.

Home of "Magnolia State" Strain Italians.

Revised Prices

First Quality Package Bees and Queens at a Price You Cannot Beat Anywhere.

PRICES

Quantity	1 to 50	50 to 5,000
2-lb. pkgs. with queens,	$1.60	$1.50
3-lb. pkgs. with queens,	2.20	2.00

QUEENS

35c each, or 3 for $1.00

We have shipped several hundred thousand packages and queens in the last 28 years and you are assured of good service, first quality Bees and Queens. Shipments are being made promptly now. No discount from above price.

Merrill Bee Company
Bucatunna, Miss.

Caucasians

Extra gentle, prolific, long tongue, little inclined to swarm, dependable workers—10% to 40% ahead of Italians. Wintered here out-of-doors and bred in a climate like their native land—severe winters—cold windy springs—thus insuring their good qualities. Foundation stock from mountainous province of Terek, Caucasus.

Carniolans

prolific at all times, very gentle, best of winterers, build beautiful white combs, most excellent workers. My Carniolan queens headed colonies producing 435 lbs. extracted over the whole yard. 32 years with them. Have supplied many State Agricultural Colleges and Experiment Stations with them. My own and Jan Strgar imported strain.

Prices, Both Races:

Untested, 1 to 5, 60c each; 6 or more, 50c each. Tested, $1.00 each. (Foreign countries, untested, $1.00 each; Tested, $1.50 each.)

Both races withstand northern winters and changeable springs better than Italians. Both races build up more readily during the unfavorable springs of our eastern and northern states and are ready for the early flow. Both races will improve Italians in gentleness and honey gathering.

ALBERT G. HANN

GLEN GARDNER, NEW JERSEY

Briefly Stated,

Caucasian Bees

become diseased less readily, are easy to handle, go far afield for nectar, fly when others quit, build up rapidly in Spring.

SELECT

Untested Queens

50c each

Caucasian Apiaries

Brooklyn, Alabama,

is the place to get them.

IMPORTANCE OF HONEYBEES IN ALSIKE SEED PRODUCTION

(Continued from page 358)

between seed growers and honey producers.

A table recently compiled shows the seed yielding capacity of one acre of alsike clover based on the number of blossoms per square yard and the average number of seeds set per head. Assuming that in a normal stand there are 1000 heads per square yard which average 50 seeds per head, the seed-yielding capacity of one acre would be 5.8 bushels. On the basis of a normal stand, in the experimental field where 90 seeds per head were harvested this past summer, a yield of 10.4 bushels per acre would result while in the case where 120 seeds were harvested within the insect cage a yield of 13.8 bushels per acre would occur.

The fact that the average seed yield per acre in Ohio is less than two bushels shows that alsike seed growers are losing many thousands of dollars annually due to inadequate pollination of their crops. Because of this economic situation there is an urgent need for a definite research and educational pollination program to serve the clover seed growers in their problems.

O.K. Bee-Hive Stand

Raised Off the Ground---
Will Not Blow Over---
Insects Cannot Enter---

All metal—rustproofed, consisting of two side rails, four legs, four felt pads, and the necessary screws and bolts. You assemble the various parts and attach it to the bottom-board of your hive. All parts of the hive bound together with an ordinary piece of bailing wire; legs are driven into the ground to the height you want it; felt pads soaked in oil prevent the entrance of ants or other insects. Postpaid to your door $1.00 each. West of the Rockies $1.50. Special prices to large users.

The Otto Konigslow Mfg. Co.

3602 PERKINS AVE. CLEVELAND, OHIO

Dealers write for proposition.

June Queens

Are good queens

A very good time to requeen colonies which have poor queens.

THREE-BANDED LEATHER-COLORED ITALIANS

Select untested queens, ea... $ .50
Lots of ten or more, ea..... .40
Lots of one hundred, ea..... .35

We can make shipment promptly and every queen is guaranteed.

THE CROWVILLE APIARIES
J. J. Scott, Prop. Winnsboro, La.

Italian Carniolan Caucasian QUEENS

Reared in separate apiaries.

Breeding Carniolans from Imported Stock.

50 cents each.

RONALD KIRK, Rockton, Pa.

RESULTS COUNT

Regardless of the price you pay for your packages and queens, results are the only things that count. Do not expect good results from cheap queens or packages. Ask your neighbors about CUTTS' BEES. 2-lbs. with queen, $1.95; 3-lbs. with queen, $2.55. Untested queens, 50c. 15% dealers discount.

J. M. CUTTS & SONS
R 1. Montgomery, Ala.

We Give You

A DOLLAR queen for fifty cents. Well-bred by HOLLOPETER from select Italian stock. Safe arrival and satisfaction guaranteed.

WHITE PINE BEE FARMS
Rockton, Pa.
Commercial queenbreeders from 1911.

HARRELL'S

Quality Queens and Package Bees

Three-Banded Italians

Rush orders a specialty. All orders filled the day you specify.

Via express collect

2-lb. package bees with Select Untested Queen, each $1.95
3-lb. package bees with Select Untested Queen, each 2.55
4-lb. package bees with Select Untested Queen, each 3.15
5-lb. package bees with Select Untested Queen, each 3.75

Queen bees via mail

Select Untested Queens, each .... $ .50
Select Tested Queens, each ... 1.00

15% Discount to Dealers

Don't loose a crop of honey. Requeen that weak colony and shake in 2 pounds bees. It pays to have them strong.

W. E. HARRELL
HAYNEVILLE, ALABAMA

THRIFTY BEES

Untested queens, 35c each
100 for $30.00

2-lb. packages with untested queen, each $1.35
12 or more packages, each, ... 1.25
3-lb. packages with untested queen, each 1.75
12 or more, each 1.65

WE CAN MAKE PROMPT SHIPMENT

We guarantee full-weight packages, safe arrival and satisfaction.

Forty-seven years' experience assures you of the finest THRIFTY three-banded Italian stock.

W. J. Forehand & Sons
Fort Deposit, Ala.

Breeders Since 1892.

TOO LATE TO CLASSIFY

FOR SALE—Twenty hives, supers and other equipment. J. T. Dill, Worthington, O.

USED ONCE—Sixty-pound honey cans and cases, 30c, 2 cans-case. Leon Short, Zion, Ill.

CLOVER HONEY at reduced prices to close out balance of crop. Geo. M. Sowarby, Cato, N. Y.

HOW TO GET swarming bees from tree 25 feet from ground without climbing, $1.00. Grover, Bristol, Vt.

THE NORMA ROY Apiaries—Italian bees, 2 pounds, 1 comb with queen, $2.00; 3 pounds, 1 comb with queen, $2.50. Norma E. Roy, Hessmer, La.

100 COLONIES of bees for sale, one or all. Guaranteed free from disease. Also supers. Write Dr. P. Pearlstein, Crompond Rd., Peekskill, N. Y.

WANTED—Carlots or less of extracted honey. Send sample and price delivered to Walter Geiger Co., 325 West Vine Street, Milwaukee, Wisconsin.

FOR SALE—We are constantly accumulating bee supplies slightly shopworn; odd sized, surpluses, etc., which we desire to dispose of and on which we can quote you bargain prices. Write for complete list of our bargain material. We can save you money on items you may desire from it. Dadant & Sons, Hamilton, Illinois.

TALKS TO BEGINNERS

(Continued from page 392)

the brood chamber to supply ample stores for winter.

At present we leave the food chamber above the brood chamber during the entire season and thus we have what is now called the double brood chamber. During the honey flow extracting supers are placed over a queen excluder on the double brood chamber. This plan simplifies management and gives splendid results, especially in regions where there is a long-drawn-out late summer honey flow, or a good fall flow. In regions where the summer flow cuts off rather abruptly it is preferable to have the food chamber above the excluder during the honey flow to insure having the food chamber crammed full of honey for ample winter stores.

Double Brood Chambers for Comb Honey

We have done enough experimenting in producing comb honey over double brood chamber colonies to know that it is possible under favorable conditions. We hope to continue experiments this season. If it can be done, and we believe it can be, comb honey production will be simplified. See article, page 292, May 1939 Gleanings.

BEES and QUEENS

3-band Italians

Priced as low as they can be produced without sacrificing Quality.
Prices after May 20th
Packages with Queens, any number,
2 lbs. $1.35; 3 lbs. $1.70.
Untested Queens, any number, 35c each.
For queenless packages deduct price of queen. Your choice of queens in dry or candy cages. 5% extra queens with orders of 20 or more packages.
No discount on these prices.
Highest quality, reliable service, full weight young bees and light crating.
Safe arrival and satisfaction guaranteed.

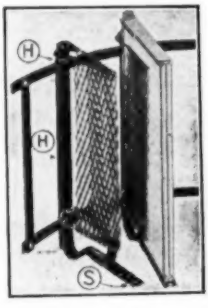
W. O. Gibbs, Brookfield, Ga.

Quick Service

Dependable Selected
ITALIAN
QUEENS

Wire Us Your Orders
June, 50c.

THE PUETT COMPANY
Hahira, Ga.



Rosedale Winged Comb Support

AND TIME SAVER

For use in Radial Honey Extractors. Style B for converting old style basket extractors over into Radials of larger capacity. Reels should not be much less than 30 inches in diameter.
Their use cuts the extracting time in half and entirely eliminates broken combs at higher speeds necessary to remove thick, heavy, ropy honey, in getting combs dry. Especially valuable in the arid irrigated districts of the West.
Their construction is such that the more centrifugal force the more supporting pressure on the surface of the combs.
Special circular mailed on request.

A.G. Woodman Co., Grand Rapids, Mich., U.S.A.

DO YOU KNOW?

(1) That the **American Honey Institute** is the only national organization working continuously for the interest of beekeepers?

(2) That the **Institute** is keeping in constant touch with food organizations over the country encouraging them to handle honey?

(3) More than 2000 inquiries regarding honey and bees have been received at the Institute office since Mrs. Grace appeared on the air over a national hook-up January 31 of this year?

(4) That the **Institute** depends solely on contributions from beekeepers and the allied industries for support?

(5) That an increased budget for the Institute will mean a wider publicity for honey?

Help yourself by helping the Institute

Mail checks to

AMERICAN HONEY INSTITUTE

Commercial State Bank Building, Madison, Wis.

XUM

Italians
Caucasians
QUEENS

From the best honey producing stock. Raised by careful men of long experience.

Prompt fast service.

1 to 49	40 cents each
50 or more	35 cents each

Weaver Apiaries
Navasota, Texas

MACK'S Queens

They Speak for Themselves

Big, Vigorous, Hardy Northern-Bred Italians. Their superiority is gaining world-wide attention. Mack is the only commercial queen breeder who starts and finishes all his big fine cells in queenright colonies. Some things the books say the bees will not do. Yet all natural colonies do this very thing. Mack has used no broodless or queenless bees in his queen-rearing operations since 1925. Is it any wonder that his queens are in such demand? If you like Beautiful, Gentle Bees that make big yields of honey—Mack's queens will more than please you. He will have a thousand of these big fine queens ready to fill your order within six hours after it is received. Remember—Mack's Queens will Speak for themselves.

Balance season only 50c each.

Herman McConnell
(The Bee & Honey Man)
Robinson Rte. 2 Illinois

Three-banded Italian Queens

Large and hefty. Good pure stock and purely mated. You cannot get better ones and surely not much cheaper. 25 cents each, any number.

SHAW & HOMAN
Shannon, Miss.

Hello Folks

Here We Are Again,

Stevenson's line-bred GOLDENS

We are those large, gentle, yellow bees you'll just love to handle and be proud to own. In addition we are the very best of honey producers. Our superiors have never been found. That is why our owners produce us. They know they are supplying their customers with the very best to be had. The queens are large, uniform, and very prolific, not subject to supersedure.

Write for descriptive circular.

1 to 9, 2-lb. pkgs. with queens, $1.95; 3-lb., $2.55. 10 and over, 2-lb. pkgs. with queens, $1.75; 3-lb., $2.30. Queens, untested, 50c; tested, $1.00. 15% discount to dealers and associations on unit price.

STEVENSON'S APIARIES
Westwego, La.

Italian Bees - Queens

We are prepared to care for your last minute orders.

We guarantee full weight packages. Young thrifty bees, safe arrival and prompt shipment.

Prices

Mated Italian queens	$ .50
3-lb. pkg. with queen	2.55
2-lb. pkg. with queen	1.95

15% discount to dealers.

The Ideal Apiaries
Durant Miss.

Italian Queens, 50c

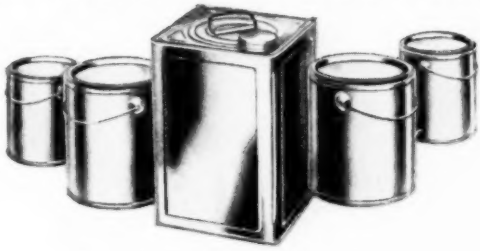
2-lb. pkg. bees with queen,	$1.75
3-lb. pkg. bees with queen,	2.25

Immediate shipment.

Citronelle Bee Company
Citronelle Alabama

We're making a "Bee-Line"

FOR OUR DISTRIBUTORS



Conveniently located, CONTINENTAL distributors carry a complete stock of honey cans and pails for immediate shipment. Consult this list for your nearest distributors when you need clean, bright, tight cans. They will be glad to serve you promptly.

Write, wire or telephone any of these Continental distributors for information on prices, sizes, terms or samples.

PHOENIX, ARIZ.
Quick Seed & Feed Co.
Western Seed, Feed & Honey Co.

ALAMEDA, CALIF.
F. E. Boyden-Hansen Co.
H. J. Hinck & Co.

ALHAMBRA, CALIF.
B-Z-B Honey Co.

BRAWLEY, CALIF.
C. P. Austin

CHICO, CALIF.
The Diamond Match Co.*

DENAIR, CALIF.
Snider Honey Co.

LOS ANGELES, CALIF.
Bryant & Cookinham
California Honey Co.
Hamilton & Co.
Los Angeles Honey Co.
Superior Honey Co.
The Diamond Match Co.*

LONG BEACH, CALIF.
Delgado & Bruce, Inc.

OAKLAND, CALIF.
Cole's Pure Honey Co.

SAN FRANCISCO, CALIF.
E. F. Lane & Son

DENVER, COLO.
Colorado Honey Producers' Association.
R. J. Chadbourne

*(Round cans and pails only)

GRAND JUNCTION, COLO.
Roselawn Apiaries

MONTROSE, COLO.
The Western Colorado Honey Exchange

BOISE, IDAHO
Reilly, Atkinson & Co. Inc.

CHICAGO, ILL.
A. I. Root Co.
W. F. Straub & Co.

HAMILTON, ILL.
Dadant & Sons

DECATUR, IND.
The Brock Store

COUNCIL BLUFFS, IOWA
A. I. Root Co. of Iowa

DES MOINES, IOWA
Charles Hewitt & Sons

SIOUX CITY, IOWA
Sioux Honey Assn.
G. B. Lewis Co.

GRAND RAPIDS, MICH.
A. G. Woodman Co.

LANSING, MICH.
M. H. Hunt & Son

ONSTED, MICH.
L. M. Hubbard

BADGER, MINN.
Gordon A. Bell

MOORHEAD, MINN.
Northwestern Supply Co.

WINONA, MINN.
Standard Lumber Co.

HIGGINSVILLE, MO.
Leahy Mfg. Co.

MANHATTAN, MONT.
Cloverdale Apiaries

ALBANY, N. Y.
G. B. Lewis Co.

NEW YORK, N. Y.
Max Ams, Inc.

SYRACUSE, N. Y.
A. I. Root Co.

FARGO, N. DAK.
Magill & Co.

CLEVELAND, OHIO
Jewett & Sherman Co.

SPRINGFIELD, OHIO
G. B. Lewis Co.

PORTLAND, ORE.
Lewis M. White

SALT LAKE CITY, UTAH
Intermountain Brokerage Co.
Miller Honey Co.

LYNCHBURG, VA.
G. B. Lewis Co.

DURANGO, WISC.
Farmers Supply Co.

WATERTOWN, WISC.
G. B. Lewis Co.

POWELL, WYO.
A. D. Hardy

CONTINENTAL CAN COMPANY

4622 West North Avenue, Chicago, Ill.

WHEELING • JERSEY CITY • LOS ANGELES • ST. LOUIS • CINCINNATI

XUM

Make Weak Colonies Profitable

Large numbers of colonies of bees do not produce good crops of honey because there is such a small number of field bees. Large crops are the result of immense quantities of bees in the fields during a honey flow.

TWO POUNDS OF BEES
PERFORM WONDERS

Add two pounds of bees to your weak colonies and note the extra amount of honey stored.

2 lb. package (no queen) $1.75

F.O.B. Medina, O.

This package of bees should be added before June 15 in localities north of Ohio River.

Package Bees for New Colonies

Prices after June 1, 1939

2 lbs. bees with queen, ...$2.50
3 lbs. bees with queen, ... 3.20

Order at once.

Shipped by express collect from Medina

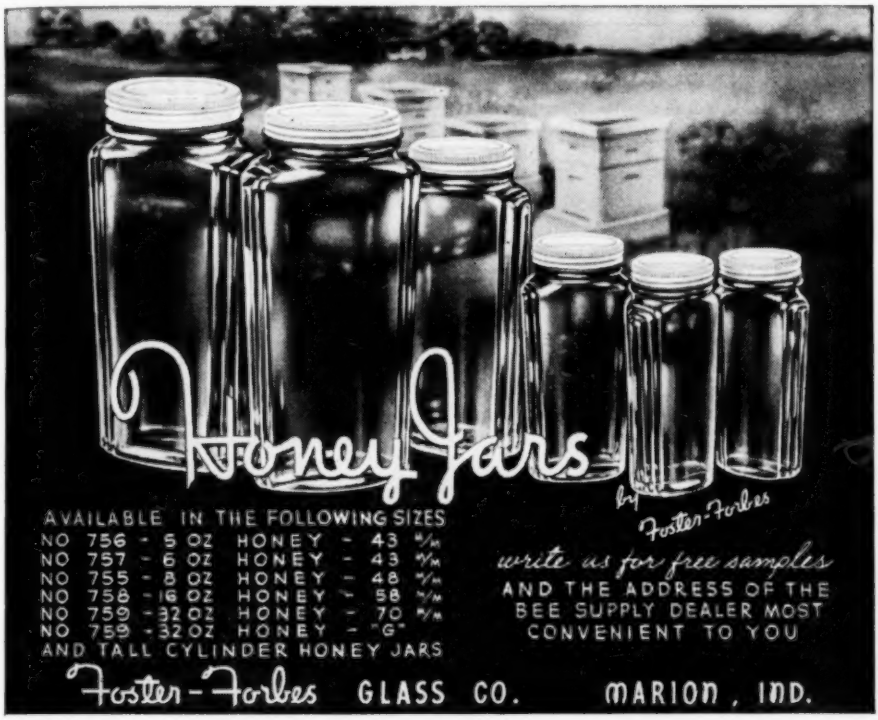
Root QUALITY Bee Supplies **The A. I. Root Co., Medina, O.** Root QUALITY BEE SUPPLIES

QUEENS Northern-Bred Italian

Colonies should be requeened every other year to guarantee large strong colonies. Our Italian Queens are the daughters of new stock imported from Italy—gentle, hardy and good honey gatherers.

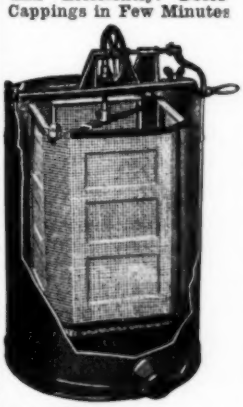
After June 1, 75c each 11 and over, 70c each

The A. I. Root Co., Medina, Ohio Root QUALITY


Honey Jars
by Foster-Forbes
AVAILABLE IN THE FOLLOWING SIZES
NO 756 - 5 OZ HONEY - 43 M/M
NO 757 - 6 OZ HONEY - 43 M/M
NO 755 - 8 OZ HONEY - 48 M/M
NO 758 - 16 OZ HONEY - 58 M/M
NO 759 - 32 OZ HONEY - 70 M/M
NO 759 - 32 OZ HONEY - "G"
AND TALL CYLINDER HONEY JARS
write us for free samples
AND THE ADDRESS OF THE BEE SUPPLY DEALER MOST CONVENIENT TO YOU
Foster-Forbes GLASS CO. MARION, IND.

THIS DOUBLE DUTY EXTRACTOR

Extracts Combs Fast and Efficiently. Dries Cappings in Few Minutes



PATENTED

A complete stock of beekeepers equipment. ASK YOUR DEALER—if he cannot supply you write for catalog or prompt shipment.

60 years of service your Guarantee of Quality.

The No. 12 takes Three Jumbo Frames or Six Shallow Frames at a loading. The No. 14 (illustrated) takes Four Standard Hoffman Frames or Eight Half Depth Frames at a time. The No. 10 takes three Standard Frames or Six Half Depth Frames.

Almost impossible to break a comb while extracting. Fast—efficient—the Ideal extractor for the average beekeeper. Crank is on side for easy turning.

CAPPINGS DRIED QUICKLY AND RIGHT

Loosen two wing nuts and entire top lifts off to easily pour in cappings. Whirling a few minutes dries them. Reel basket is quickly lifted out to dump dried cappings and for easy cleaning. Ball bearing reel, heavily built throughout, adjustable honey gates.

Double Duty feature alone is worth half the price and found only on these extractors. Write for complete extractor catalog.

Size	Pockets	Weight	Hand Drive	Power Drive
3-Frame	9⅝"x16"	40 lbs.	$13.35	$18.85
3-Frame	12"x16"	50 lbs.	14.90	20.40
4-Frame	9⅝"x16"	50 lbs.	14.35	19.85
4-Frame	12"x16"	90 lbs.	20.50	25.50

STANDARD PRODUCTS—A sign of good equipment

24-Frame Radials	$78.00
2-Frame Reversible Extractors	21.50
Bee Smokers (with leather bellows) 3½x7	.95
Bee Smokers (with leather bellows) 4x7	1.10
Plain Uncapping Knives—8½" size	1.10
Plain Uncapping Knives—10½" size	1.25
Steam-Heated Knives (2 stem with tubing)	4.35
2 Gal. Steam Boiler for knives	2.50
Bee Escapes (2 way style) 11c each, 12 for	1.15
Hive Tools (with nail hole)—8" size	.50
Hive Tools (with nail hole)—10" size	.55
Spur Wire Imbedders	.20

The Standard Churn Co. Wapakoneta, Ohio

Italian Bees and Queens

Breeding Queens Selected from the Famous Northwestern Ohio Clover Belt where we Produce Honey by the carload. Thirty Years' Experience in Northern and Southern States insures you bees and queens of the largest Honey Producing Strain possible

	unit	10	25	50
2-pound packages with Queen	$1.75	$1.65	$1.50	$1.30
3-pound packages with Queen	2.25	2.15	2.00	1.80
4-pound packages with Queen	2.75	2.65	2.50	2.30
5-pound packages with Queen	3.25	3.15	3.00	2.80
Tested Queens	1.00	.90	.80	.70
Untested Queens	.50	.45	.40	.35

For Comb Packages, add 40c to Prices above for each comb. For queenless packages, deduct from Packages the price of queens in quantity. We ship the package with queen introduced, if wanted. This is superior to the so-called loose-queen package. We guarantee these queens introduced 100%. We ship one extra queen or package with each Order of 25 or additional 25.

D. C. JACKSON APIARIES
MOREHEAD APIARIES

FUNSTON, GA., OR CONVOY, O., U. S. A.

Pure Italian Queens and Package Bees

You can count on us for perfect packages, full weight, quick service, and good queens. Our colonies are regularly state inspected. We furnish, with all shipments, a clean health certificate.

Prices for June 1st.	Queens, untested, each	$ .40
	Queens, tested, each	.80
	2-lb. package with queen	1.50
	3-lb. package with queen	1.90
	2-lb. package without queen	1.10
	3-lb. package without queen	1.50
	Each additional pound bees	.40

10% discount allowed dealers.

LUCEDALE APIARIES, **Lucedale, Mississippi**

June Prices are Lower

We have great quantities of bees to offer at lower prices. Build up those weak colonies with queenless bees, so that they will make you a profit rather than be an expense.

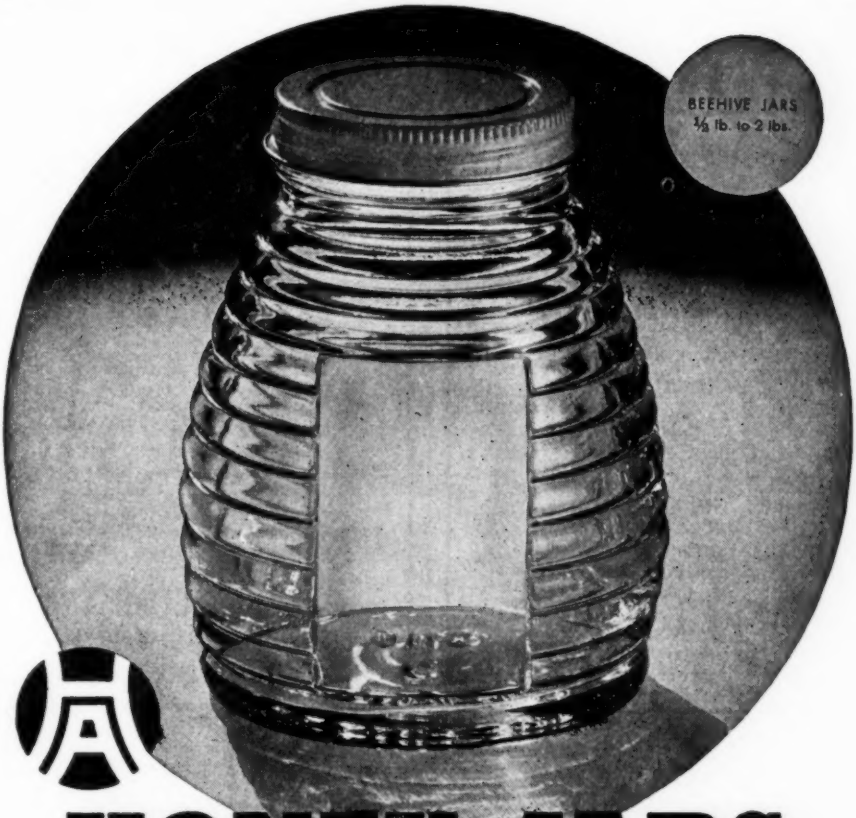
REQUEEN those colonies where the queens are old and failing, with our IMPORTED STRAIN ITALIANS. They live longer and winter better, giving you a better crop at the same time.

Shipments made on short notice. Write for latest prices. A card will put you on our mailing list.

J. G. ROSSMAN, Moultrie, Ga. **E. W. LONG, Concver, Ohio**

ROSSMAN & LONG

Box 133, Moultrie, Ga.

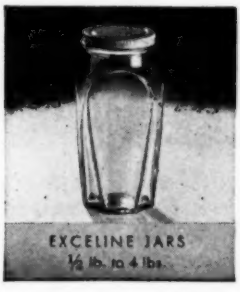


HONEY JARS

Hazel-Atlas presents four complete lines of Honey Jars, all designed specially for honey packers . . . Crystal clear glass displays the natural beauty of your product . . . Jars are easily packed and labeled . . . Available in a complete range of sizes . . . Write for free samples.

HAZEL-ATLAS GLASS CO.

WHEELING, W. VA.



XUM

KNIGHT'S

Dependable Queens

Treat Yourself to the Best

Line-bred, three-banded, leather-colored Italians, the best honey gatherers, best winterers and reasonably gentle.

PRICES

1 to 9	..... $	.50 each
10 to 24	.....	.45 each
25 or more	.....	.40 each

15% discount to dealers off base price.

No charge for clipping.
All queens guaranteed mated pure.

JASPER KNIGHT

HAYNEVILLE, ALA.

Quality Bred Italian Bees and Queens

Quality, not Price, Makes the Value

Beware and Buy Wisely

SUMMER PRICES

Untested young laying queens, ea.	$ .50
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Jesup, Georgia, U. S. A.

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